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THE RELATIONSHIP BETWEEN MOOD, EMOTIONAL LABOR, EGO DEPLETION, AND CUSTOMER OUTCOMES OVER TIME

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THE RELATIONSHIP BETWEEN MOOD, EMOTIONAL LABOR, EGO DEPLETION, AND CUSTOMER OUTCOMES OVER TIME

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Industrial-Organizational Psychology

by
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ABSTRACT

This dissertation examined the role of customer service representative mood in predicting emotional labor demands which subsequently predicted ego depletion and customer satisfaction ratings and tip percentage. Organizations require employees to display a positive mood or emotion and generating organizationally mandated positive emotions to display to customers requires emotion regulation which can be quite taxing for employees. Indeed, emotion regulation, a form of self-regulation, has been experimentally linked to a state similar to exhaustion called ego depletion. As such, employee mood, emotional labor and subsequent ego depletion are likely to play a role in customer ratings of satisfaction. A study was conducted that examined the interplay of employee mood, emotion regulation strategy and ego depletion on customer satisfaction over the course of an entire shift. Results supported some of the hypotheses. An interaction of surface acting and time mediated the interaction of mood and time to predict ego depletion such that mood generally decreased throughout the evening resulting in higher levels of surface acting later in the shift which resulted in higher levels of ego depletion at the end of the shift. Additionally, mood and time interacted to predict deep acting such that the relationship between mood and deep acting was initially negative but became more positive as the evening wore on suggesting deep acting causes one’s mood to shift from more negative to more positive. The discussion focuses on energy as a resource gained through deep acting and depleted through surface acting.
DEDICATION

This dissertation is dedicated to all the individuals that toil day in and day out in the customer service industry.
Successfully completing a dissertation in a timely manner is a formidable task. Indeed, I would not have completed this dissertation without helpful guidance and support of a number of people. These people deserve more recognition than I can possibly provide in a few short paragraphs. Nevertheless, I wish to devote the remainder of this page to these people.

First, I wish to thank my incredible mentor, advisor, and friend, Dr. Tom Britt. Tom was instrumental in molding me into the academic I am today. He helped to guide and shape my ideas into the present dissertation and provided unfailing support throughout my graduate career. I am eternally thankful for all that he has taught me.

Second, I wish to thank my dissertation committee, Dr. Bob Sinclair, Dr. Patrick Rosopa, and Dr. DeWayne Moore. All three members provided excellent feedback throughout the entire process of writing this dissertation and helped to make it into the paper it is.

Finally, this entire journey through graduate school would not have been accomplished without the undying support from my family. Specifically, I want to thank my wife, Jennifer, for her patience, love, support, and willingness to proofread the countless iterations this dissertation went through. I would have never finished without her.
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CHAPTER ONE
INTRODUCTION

As the United States has increasingly moved away from manufacturing and toward a service economy, the dynamic of work has changed for millions of employees. While the majority of workers at one time may have interacted with a few fellow employees to design or build some product, many workers are now forced to interact with customers to sell or provide a service. In essence, work has become much more social, oriented around people, instead of objects, as it once was. Because work is now more social in nature, a whole host of factors once never considered by Industrial-Organizational psychologists have become important determinants of worker performance, attitudes, and well-being. Such factors include the emotions and behaviors experienced by employees, as well as organizational demands focused on pleasing customers. Since the customer plays such a vital role for the success of many organizations, and organizations are composed of employees interacting with these customers, it is important to understand the dynamics involved in customer-employee interactions.

Since customers are the lifeblood of all organizations at some level, companies will do just about anything to please customers. Happy customers tend to be loyal customers. Thus, employees whose job it is to make happy customers, play a critical role in keeping customers loyal. Organizations likely believe that providing service with a smile will result in happier customers who will be more apt to return to the organization in the future. The idea is that employees who smile and act positive and friendly will
actually create more positive emotions in customers who will associate this feeling with the organization. This idea is actually grounded in theory. The emotional contagion theory is used by researchers to describe how individuals unknowingly mimic the facial expressions of others. Mimicry of facial expression eventually leads people to actually feel the emotions displayed on their faces (Hatfield, Cacioppo, & Rapson, 1993). Indeed, research indicates that customers of organizations that require positive emotional displays by employees experience more positive emotions themselves (Hennig-Thurau, Groth, Paul, & Gremler, 2006; Pugh, 2001).

Unfortunately, providing friendly service often requires employees to augment their emotions to display positive emotions to customers because employees do not always feel the emotion they need to display (Grandey, 2000). Employees do this not only because of societal norms (Goldberg & Grandey, 2007), but also because organizations often require customer service representatives (CSRs) to meet display rules (Ekman, 1973). Thus, in order to meet the display rule, CSRs must engage in emotion regulation, a form of self-regulation (Baumeister, 2002). Unfortunately, emotion regulation can be quite costly to the employee, as it leads to a state of diminished resources, which Baumeister calls ego depletion (Muraven, Tice, & Baumeister, 1998). A number of studies have shown that only one instance of emotion regulation can lead to ego depletion (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Martijn, Tenbült, Merckelbach, Dreezens, & de Vries, 2002; Muraven et al., 1998). However, most customer service representatives must engage in numerous acts of emotional regulation daily and very little research has examined how multiple acts of regulation affect ego
depletion. Thus, research is needed to examine the effects of emotional labor in a setting in which multiple interactions occurs back-to-back.

While emotion regulation has been shown to negatively impact individuals, the outcome of that regulation, namely more positive emotional displays, has been shown to improve customer satisfaction and tipping in a restaurant setting, presumably through improving the customers’ mood (Lynn, 2003). What is less clear, however, is how customer satisfaction and tipping fluctuate over the course of an entire evening due to differences in server mood, emotion regulation, and ego depletion. Thus, the purpose of the present dissertation was to examine the relationship between server mood, emotional labor strategy, ego depletion, and customer satisfaction and tipping over time.

In order to integrate these three literatures (i.e. mood and emotional contagion, emotional labor, and ego depletion), I will divide the remainder of this Introduction into four discrete sections. First, I will provide a review of the emotional contagion literature. Next, I will discuss more specifically the roles of emotions in customer-employee exchanges, including the process by which employees develop the emotions they are to display. Next, I will discuss the impact of emotion regulation on the well-being of employees. Specifically, I will discuss the role of ego depletion as a proximal outcome of emotional labor. Finally, I will integrate all three reviews and discuss how relations among the constructs will differ over time. Following the introduction, I present the method used to test the hypotheses, the results of the study and I conclude the dissertation with a discussion of those results.

Emotion, Mood, and Affect
Emotions and related constructs clearly play a major role in the lives of humans, and expressions of emotion are universally recognized by people of all cultures (Ekman, 1973). While people of all cultures may recognize a set of discrete emotions, the waters are muddied when laypeople and researchers alike begin using terms like emotion, affect, and mood to describe similar states people feel or experience. As such, it becomes important to clearly define each of those terms and distinguish them from one another.

One of the father’s of modern psychology, William James (1884) regarded emotions as response tendencies one has for dealing with evolutionarily significant stimuli. These response tendencies include an experiential, physiological, and behavioral component (Lang, 1995). For example, a bank teller who just encountered a bank robber will most likely have experienced fear. Accompanying that experience will be an increased heart rate, a facial expression of fear, and a behavioral component of complying with the robber’s demands and maybe cowering. This discrete emotion of fear, like other emotions, is linked to a very specific object or event (Frijda, 1993) and tends to be relatively short lived (American Psychiatric Association, 1994). The robber (object of fear) wants to escape as quickly as possible which removes the fear inducing stimulus for the teller.

Moods, on the other hand, tend to be longer lasting (Nowlis & Nowlis, 1956) and not linked to any specific event or object (Morris, 1989). Furthermore, moods are generally linked to broader action tendencies such as approach or avoid (Lang, 1995).

While moods are distinguishable from emotions (Parkinson, Totterdell, Briner, & Reynolds, 1996), some researchers have organized moods and emotions into a
hierarchical structure in which lower order emotions emanate from higher order moods that have an associated valence (Diener, Smith, & Fujita, 1995), and combined this overarching structure can be referred to as affect (Gross, 1998). Diener et al. (1995) found that generally pleasant emotions are more associated with positive moods and unpleasant emotions are associated with negative moods. Thus, it seems reasonable to believe that both broad (mood) and narrow (emotion) response tendencies can occur both independently and simultaneously and combined these responses are referred to as affect. The focus of the present dissertation is on the experiential and behavioral response tendencies that occur through the experience of mood.

Emotional Contagion

As noted earlier, individuals manifest their reactions to evolutionarily important stimuli in a number of ways. One primary result of encountering important stimuli is changes in facial, vocal, and postural expression (Hatfield, Cacioppo, & Rapson, 1994). These changes are readily apparent to people around us who may or may not be aware of the stimulus evoking the response. Interestingly, people as far back as the 18th century have found that emotional expressions seem to exert some influence on those observers (Smith, 1757/1976), even if they are unaware of the stimuli. The observer tends to display the same expressions and report experiencing the same feelings even having not experienced the original stimulus. It is as if the observer caught the emotional response simply by observing the original person. Researchers today call this phenomenon emotional contagion (Hatfield et al., 1994).
Hatfield et al. (1994) argue that emotional contagion works through a three step process in which people mimic the facial, vocal, and postural expressions of a person with whom they are engaged. Then through an afferent feedback process, those individuals perceive that they are experiencing the emotions they are now expressing because they mimicked the original expression (Adelmann & Zajonc, 1989; Hatfield et al., 1994).

A number of studies indicate that facial expression mimicry is common and actually occurs nonconsciously and automatically (Dimberg, 1982; Schmeck, 1983; Vaughan & Lanzetta, 1980). For example, researchers have shown that infants will imitate the facial expressions of their mother (Haviland & Lelwica, 1987) and even strangers (Meltzoff & Moore, 1977; Reisland, 1988). Likewise, adults have been shown to mimic the facial expressions of strangers (Hsee, Hatfield, Carlson, & Chemtob, 1980). For example, Hsee et al. (1980) secretly videotaped college students as they viewed a film clip of a man recounting both an incredibly happy and sad life story. Independent judges then rated the videotaped facial expressions on the extent to which the participant appeared happy or sad. Results indicated that students viewing the sad film clip expressed sadness more so than happiness and vice versa for the happy film clip.

Other research on mimicry has shown that it occurs almost instantaneously (Haggard & Isaacs, 1966) lending credence to the idea that it occurs automatically (Lipps, 1903, as cited in Hatfield et al., 1994). Haggard and Isaacs (1966) found that facial expressions could change in as little as 125-200 milliseconds when presented with different stimuli.
Clearly, research indicates that humans tend to mimic the facial expressions of those around them, even if those people are strangers. Furthermore, this mimicry occurs almost instantaneously and automatically without any direct control by the mimicker. However, mimicry alone tells us nothing about whether the observer is actually experiencing the mimicked emotion.

Hatfield et al. (1994) argue that people in part refer to their facial expressions in order to determine how they are feeling. They base this contention on theory and research that goes back to Darwin. Indeed, Darwin observed that angry individuals who take notice of their expressions and gestures become even angrier, and those that do nothing to stop the expression of fear will continue to experience fear (Darwin, 1872/1965). Likewise, James (1890/1984) believed people get a sense of their emotions by observing their muscular, glandular, and visceral responses to any given stimuli.

Modern researchers have also theorized that our experience of emotions is in part a function of our facial expressions (Adelmann & Zajonc, 1989; Matsumoto, 1987). For example, Laird and Bressler (1992) argued that people perceive their emotional experiences using information from multiple sources. One source is the facial expressions, postures, and other behaviors people perceive while another source is the contextual factors that occur around us.

Other researchers have actually tested the idea that people infer their emotional experiences based partly on their facial expressions. Two classic studies support this hypothesis. In one study, Laird (1984) told participants he was interested in studying the action of facial muscles. He attached electrodes to several places on the face of the
participants and then had them make either an angry or happy face. The electrodes actually provided no information and were used as a deceptive device to make participants believe their muscle movements were being measured. Laird was actually interested in determining if happy and angry facial expressions would result in participants reporting being happier or angrier than their peers. Laird found that participants in the angry condition reported feeling angrier and people in the happy condition reported feeling happier.

In another study designed to show that facial feedback provides information about how we feel, Strack, Martin, and Stepper (1988) had participants hold a pen either between their teeth or their lips. Holding a pen between the teeth causes the muscles used for smiling to fire and holding a pen between the lips causes the muscles used for frowning to fire. Participants who held the pen between their teeth found a series of comic cartoons to be funnier than those who held the pen between their lips. Thus, both studies indicate that humans gather some information about how we feel from the perception of our facial expressions.

In summary, Hatfield et al. (1994) argued that emotional response sets of facial expression and experience can be transferred from person to person via a process of facial mimicry and afferent feedback based on the facial expression resulting from that mimicry. This emotional contagion theory has important implications for organizations wishing to modulate the affective experience customers have with the organization. Because moods and emotions seem to be contagious, organizations may wish to use this to their advantage by directing their employees to display positive emotions to their
customers who will mimic and then go on to experience those positive emotions. Indeed, many organizations today have setup display rules (Ekman, 1973) that guide the emotional behavior employees’ exhibit to customers because the organizations believe that the rules and subsequent emotional displays will result in higher customer satisfaction. A number of studies support this idea and are reviewed below.

Pugh (2001) was one of the first researchers to examine the emotional contagion effect in employee-customer interactions. He hypothesized that employees displaying positive emotions to customers would result in customers mimicking those emotions and actually feeling higher levels of positive affect. He then argued that the increased positive affect would result in higher ratings of service quality. He tested this hypothesis with bank tellers and their customers. The researcher and his assistants coded bank teller smiles and then asked customers to complete a measure of mood and service quality. Results supported his hypothesis that more teller smiling was associated with increased customer mood and ratings of service quality.

Gountas and Gountas (2007) found that customers’ ratings of satisfaction and intention of returning to a particular airline were predicted by customers’ emotional experiences as those experiences were influenced by airline salespeople. As predicted, the more positive the emotional experience the higher was the customers rated satisfaction and likelihood of returning to that particular airline for future travel.

In another study, Barger and Grandey (2006) examined the relationship between facial expression mimicry, customer mood, customer ratings of service quality, and customer satisfaction. The authors hypothesized mimicry would lead to more positive
customer moods which would then result in higher customer satisfaction. Furthermore, the authors believed that facial expression mimicry would result in higher ratings of service quality which would result in higher ratings of customer satisfaction. Thus, the authors posited that satisfaction would be influenced directly by affective processes as well as indirectly through cognitive processes. A total of 220 customer-employee interactions were observed and coded for facial expression mimicry. Customers then completed surveys of service quality and satisfaction after the encounter. Results from the study revealed facial expression mimicry by the customer was associated with higher reports of service quality and higher overall satisfaction, but mimicry did not affect the customer’s mood. The authors contended that the relatively short customer-employee encounters did not provide enough time for the contagion effect to take place to alter the mood of the customer.

Yet another study indicated positive emotions displayed by employees resulted in increased customer satisfaction ratings and customer loyalty (Hennig-Thurau, Groth, Paul, & Gremler, 2006). Hennig-Thurau et al. conducted an experiment in which they manipulated the extent to which employees smiled and the method used to generate the smile. Some employees were instructed to fake a smile while others were told to actually try to feel more positive in order to generate a more authentic smile. The authors measured customer mood before and after the interaction and satisfaction and customer loyalty intentions after the interaction. Results revealed more authentic smiles were related to increased customer positive affect and increased positive affect was associated with higher levels of customer satisfaction and loyalty intentions. Interestingly, the
authors failed to find an effect of employee faked smiling on customer mood or satisfaction. Thus, like Barger and Grandey (2006), these authors failed to find a pure mimicry effect calling into question the emotional contagion hypothesis as it relates to employee-customer interactions.

Employee mood and positive emotional displays not only affect ratings of satisfaction, service quality, and loyalty intentions, they are thought to also be associated with actual behavioral outcomes of customers. For example, Rind and Strohmetz (2001) argued that servers who were able to induce a positive mood in customers would be more likely to receive higher tips than those servers who were unable to positively alter the customers’ mood. Supporting this contention was a study conducted by Tidd and Lockard (1978). These authors reported that waitresses in a bar received a significantly higher tip percentage when the smile they presented to patrons was large and exposed teeth. Thus, employee mood and positive emotional displays are actually associated with customers opening their pocketbooks.

While actual tip percentage is an important outcome to examine, tipping restaurant servers a traditional 15% is considered a social norm. Unfortunately, many consumers find it difficult to calculate 15% of any given bill and as such normal tip percentages may fall within a given range (Azar, 2004). Because of this social norm, it becomes important to identify the extent to which one’s tipping behavior differs from normal tipping behavior as a result of receiving good service. An extensive literature review failed to identify any studies examining tip deviation in which customers were asked the extent to which the tip they left differed from normal tipping behavior. As
such, I was also unable to locate studies that examined whether emotional contagion can impact tip deviation.

While the mechanism operating behind the scene may or may not be emotional contagion, it is clear that employee mood and emotions play a dramatic role in customer-rated outcomes. Research findings show customers rate service quality, satisfaction, and loyalty intentions higher when employees are more positive (Barger & Grandey, 2006; Gountas & Gountas, 2007; Hennig-Thurau et al., 2006; Pugh, 2001) and they are more likely to leave higher tips (Tidd & Lockard, 1978). Experiencing a positive mood may make smiling and behaving more positively towards customers easier. These findings lead to the following hypothesis:

H1a: Employee mood will be positively related to customer satisfaction.

H1b: Employee mood will be positively related to tip percentage.

H1c: Employee mood will be positively related to tip deviation.

Emotional Labor

Overcoming Emotional Dissonance

While employee mood and displays of that mood are positively related to a number of important customer outcomes, these results presuppose that employees generally feel positive while interacting with customers. Certainly some employees are more likely to generally experience higher levels of trait positive affect than others (Watson, Clark, & Tellegen, 1988), but not everybody can always experience positive moods and emotions. Perhaps this is one reason why organizations mandate employees display positive emotions through implementing display rules (Ekman, 1973). This
likely creates a situation in which a discrepancy exists between the mood or emotion experienced by the employee and the emotion the employee must display. This discrepancy is called emotional dissonance (Hochschild, 1983; Morris & Feldman, 1996; Zapf, Vogt, Seifert, Martini, & Isic, 1999). The fact that at least some employees experience emotional dissonance while interacting with customers creates a situation in which employees must regulate either their actual feelings or the display of emotions they do not feel.

Emotion regulation is a common phenomenon (Gross, 1998) and can best be described using Control Theory. Control Theory is centered on a negative feedback loop with an input function, a standard, a comparator and an output function (Carver & Scheier, 1998). Information from the environment enters the loop at the input function. This information is then compared against some standard in the comparator. Discrepancies between standard and current state derived from the input are reduced by activating the output function which seeks to align the input with the standard until no further discrepancies are detected (Miller, Galanter, & Pribram, 1960).

In the context of employee emotion regulation, Diefendorff and Gosserand (2003) argued that display rules serve as the standard to which emotional displays are compared. According to Diefendorff and Gosserand, self-perceptions of the felt emotion or the emotional display serve as the input into the loop. However, it is also possible that additional information such as emotional displays portrayed by customers is also taken in. This information (i.e. self-perception of emotions, customer’s emotional displays) is then compared against the display rule in the comparator. If a discrepancy exists between
the displayed emotion and the standard, two different approaches can be taken to reduce 
this discrepancy. The first method is to change the standard, or in this case, the display 
rule. This method clearly would be frowned upon by the organization, as it sets the 
standard in the first place. The second approach is to change the behavior, which can be 
initiated through emotion regulation. This might include smiling, changing voice tone, 
changing other facial expression, actually trying to change the felt emotion, etc. Thus, 
emotion regulation strategies are but a small component of a larger process that involves 
information gathering, judgments, and behavior, all of which is effortful. This process of 
regulating emotions and their displays to meet the display rule is called emotional labor 
(Grandey, 2000; Hochschild, 1983).

Emotional Labor

Over the last 25 years, many emotional labor conceptualizations have emerged. 
Several conceptualizations have common elements, whereas others are completely 
independent of each other (cf. Ashforth & Humphrey, 1993; Diefendorff & Gosserand, 
2003; Glomb & Tews, 2004; Grandey, 2000; Hochschild, 1983; Mann, 1999; Morris & 
Feldman, 1996). The lack of a definitional consensus could lead to contradictory 
operationalizations, deficient measures, and overall inconclusive results (Schwab, 1980). 
Therefore, conceptualizations of emotional labor will be the focus for this part of this 
paper. Each conceptualization presented in the literature will be reviewed and discussed. 
The order in which I discuss these conceptualizations is based on the “uniqueness” of the 
definition. I first describe relatively unique definitions and then move onto more similar 
definitions.
Ashforth and Humphrey (1993) defined emotional labor as simply the act of displaying emotions expected of the employee. They argued that the behavior displayed for customers is the most important aspect of emotional labor and the underlying process of generating that behavior is inconsequential. Ashforth and Humphrey liken emotional labor to impression management. Impression management is the “conscious or unconscious attempts to control the images that are projected in … social interactions” (Schlenker, 1980, p. 6). Though impression management requires a degree of self-regulation or control, the ultimate outcome is the image projected or displayed, which seemingly fits into Ashforth and Humphrey’s conceptualization of emotional labor.

They believe that repetitive engagement in emotional labor leads to the behavior becoming routine and automatic, resulting in little self-regulatory effort. Consistent with this contention, Van Maanen and Kunda (1989) described how amusement park operators displaying of positive emotions became so automatic that they became numb to their actual emotions. Furthermore, in line with the control theory perspective presented above, Ashforth and Humphrey (1993) argue that there are instances when employees may not need to engage in any regulation strategy simply because the emotion they are to display is the one they actually feel. This is in contention with other conceptualizations (cf. Glomb & Tews, 2004; Morris & Feldman, 1996). For example, a customer service representative just arriving to work after having received an unexpected gift would have no reason to surface or deep act because she or he is already in a positive state. Thus, in Ashforth and Humphrey’s model a discrepancy between felt emotions and those to be displayed is a predictor of emotional labor.
Because Ashforth and Humphrey’s model focuses on the behavior itself, it is easier to acknowledge outcomes of emotional labor, the most important of which is the perceived genuineness of the display. They argue one can measure how well an employee is engaging in emotional labor by ascertaining how genuine the emotional display is from the customer’s perspective. Thus, if the customer does not perceive a genuine expression of happiness, the employee is engaging in emotional labor for naught.

In a similar model focusing on behavior, Glomb and Tews (2004) center their conceptualization on the display of appropriate emotions, which may or may not be felt, and the non-display of inappropriate emotions, that again may or may not be felt. All of this occurs while conforming to the display rules of the organization.

They argue that their conceptualization conforms to that of Ashforth and Humphrey (1993) and extends it by taking into account the underlying felt emotion. Glomb and Tews argue that emotional labor can occur when displaying the emotion that is truly felt and that including this makes their conceptualization more comprehensive. Furthermore, they distinguish between positive and negative emotional states, arguing that the valence of the felt and displayed emotion play an important role. Research on antecedents and consequences of these disparate states show differences occur between them (Carver, 2001; Tellegen, Watson, & Clark, 1999; Watson, Weise, Vaidya, & Tellegen, 1999).

A similar conceptualization of emotional labor is described by Mann (1999). She defined emotional labor as “the state that exists when there is a discrepancy between the emotional demeanour that an individual displays because it is considered appropriate, and
the emotions that are genuinely felt but that would be inappropriate to display” (Mann, 1999, p. 353). Mann’s definition encompasses two dimensions outlined by other researchers. She argues that emotional labor consists of an internal state, emotional dissonance, where the emotion to be displayed does not match the emotion that is felt. She also argued that “it is not enough just to feel dissonant” (p. 353), but that a behavioral display must be the end result. She further adds that display rules may be formal expectations set in place by the organization or an internal expectation by the laborer to display the appropriate emotion (Mann, 1999). Thus, internal and societal norms become an important predictor of emotional labor.

The conceptualizations by Ashforth and Humphrey (1993), Glomb and Tews (2004), and Mann (1999) are clearly in agreement with Diefendorff and Gosserand (2003). Each of the conceptualizations identifies an internal state of emotional dissonance as being a precursor to an outcome, namely an emotional display. The originators of each of those conceptualizations argue that simply detecting a discrepancy and then engaging in the behavior of smiling or otherwise altering an emotional expression is emotional labor. While this may be true, not one of these conceptualizations describes how the employee goes about overcoming that dissonance or altering the emotional display. Fortunately, other researchers have described in more detail the internal processes that occur in order to allow the employee to satisfy the display rule and overcome any emotional dissonance (see Grandey, 2000; Hochschild, 1983).
Arlie Hochschild (1983) was actually the first person to study emotional labor and she focused more on the actual process that occurs in emotional labor than on emotional dissonance or the observable behaviors employees engaging in emotional labor show. Through her observations at a training center for flight attendants, Hochschild (1983) determined that there are two ways to manage emotional displays. The first management strategy, surface acting, is when an employee changes the outward expressions she or he is presenting so that she or he may appear more positive. Surface acting occurs when the employee detects a discrepancy between the emotion currently being displayed and the emotional display directed by the display rule. For example, a customer service representative who has just been accosted by a disgruntled customer smiles and thanks the customer for his or her business even though the employee has strong negative feelings which may be showing on the employees face. The second strategy is deep acting and involves changing the actual feeling one may have so that the employee does not just appear happy, but actually is happy. Thus, deep acting works by eliminating the discrepancy between the felt emotion and the emotion to be displayed. An example of deep acting would be when a flight attendant views a given situation from a different perspective and tries to manipulate his or her feelings to match that perspective. The third strategy which is often used in concert with surface acting and deep acting is actually suppressing the true feelings that the employee has at the time. Suppressing one’s true emotions begin as an effortful process in both surface acting and deep acting and continues throughout the whole process of surface acting. Deep acting on the other
hand allows one to change his or her emotions to match the display rules making suppression of undesirable emotions no longer an issue.

Hochschild (1983) argued that employees engaged in emotional labor will experience negative outcomes such as job stress and burnout. The mechanism behind these outcomes is the gap between the emotions that are displayed and the true emotions that are felt. This emotional dissonance is of primary concern when an employee is engaging in surface acting, as this is where the true disconnect should exist. Not only are employees displaying emotions not truly felt, they are also exerting effort trying to regulate emotions, both of which may have deleterious effects on the employee.

Hochschild operationalized emotional labor by fitting jobs into categories based on their emotional labor requirements. Three criteria were used when categorizing the jobs: the presence of facial contact or voice contact, the requirement for the worker to elicit an emotional state in a client, and the amount of control the employer has over the employee. Wharton (1993) pointed out that a fundamental flaw with this operationalization lies in the fact that even though surface acting and deep acting are the primary mechanisms of emotional labor, the model does not directly incorporate these as measurable characteristics. Instead Hochschild categorized jobs as either having or not having emotional labor requirements.

Expanding upon Hochschild’s work, Grandey (2000) presented a theoretical paper in which she described in more detail surface acting and deep acting. Grandey (2000) defined emotional labor as “the process of regulating both feelings and expressions for the organizational goals” (p. 97). Thus, this conceptualization focuses on the two
processes that underlie emotional labor: surface acting and deep acting. Grandey argues that conceptualizing emotional labor as surface acting and deep acting allows one to explain both positive and negative outcomes. The outcomes can then be used as criteria for training individuals to engage in either surface acting or deep acting.

Grandey (2000) questioned how employees engage in either surface acting or deep acting and looked to the emotion regulation literature to develop a theoretical model. According to Gross (1998), emotions can be regulated at one of two points. Antecedent focused regulation is the first option that employees have to regulate their emotions. They can do this by either thinking about events in their life that call up the emotion that they need or by cognitively reappraising the situation. For example, a waitress who enjoys operas whistles arias while serving customers so that she displays positive emotions. A person cognitively reappraising a situation might think of adults as children so that s/he does not become angry with childish behaviors portrayed by the adult customers (Grandey, 2000). Thus, deep acting seems to be a very adaptive mechanism for handling emotional dissonance.

Emotions can also be regulated while responding to a given situation. This type of regulation corresponds to surface acting. Customer service representatives that respond to customer complaints may fake empathy or smile at each and every customer regardless of the mood they are actually in (Grandey, 2000). This implies that surface acting never actually resolves the discrepancy between felt emotions and emotions being displayed. Thus, surface acting seems to be a maladaptive mechanism that could be more effortful than deep acting.
A final conceptualization developed by Morris and Feldman (1996) defines emotional labor as “the effort, planning, and control needed to express organizationally desired emotion during interpersonal transactions” (p. 987). Like Grandey (2000) and Hochschild (1983), Morris and Feldman differ from Ashforth and Humphrey (1993) in their view that regulatory effort is important in understanding the emotional labor process. They argue that all situations involving emotional labor (even when the emotion to be displayed is the emotion felt) are effortful. Take for example a flight attendant who tends to be overly obnoxious when in a positive mood. This flight attendant must still regulate his or her emotional display so that his or her over-exuberance still meets the display rules in place. Morris and Feldman also argue that situations where the emotion to be displayed is similar to the felt emotion, such as the example above, will require less effort than one where the mismatch is greater. Finally, Morris and Feldman believe that deep acting is more effortful than surface acting because one must actively call-up images, or cognitively reappraise the situation to help him or her display the appropriate emotion. Thus, one would expect deep acting to be associated with more negative outcomes.

Morris and Feldman (1996) take an interactionist view towards emotional labor. That is, they believe that both felt and displayed emotions are influenced by the social environment. Essentially, they argue that emotions are, to a certain degree, socially constructed. Therefore, outside influences can exert control over the direction of emotional experiences and displays as well as enhance or suppress the emotional expression (Ashforth & Humphrey, 1995; Hochschild, 1990; Kemper, 1990; Thoits,
1990). Morris and Feldman (1996) incorporate these outside influences as four dimensions in their conceptualization.

The first dimension is the frequency of the emotional display. The more often an employee encounters customers the more that employee is engaging in emotional labor.

The second dimension proposed is the level of attentiveness to the display rules. Morris and Feldman (1996) divide this dimension into two subfactors, duration and intensity of the display has shown that convenience store clerks often have very short highly scripted encounters with customers implying that the effort required for these interactions is minimal (Rafaeli, 1989; Sutton & Rafaeli, 1988). This also implies that encounters of longer duration will require employees to engage in greater amounts of emotional labor.

Intensity measures the strength or magnitude with which an emotion is displayed. Morris and Feldman (1996) argue that intensity is very difficult to fake. Thus, jobs that require intense emotional displays also require the employee to deep act more often. This in turn means that certain jobs requiring intense displays are more effortful. Rafaeli’s (1989) observational study showed short scripted emotional displays were not as intense as longer displays therefore adding additional evidence that surface acting is less effortful.

Since emotional displays in organizations have been classified as positive, neutral, or negative (Wharton & Erickson, 1993), variability in emotional display rules is the third dimension discussed by Morris and Feldman (1996). Here again the highly scripted nature of the encounters in Rafaeli’s work (Rafaeli, 1989; Sutton & Rafaeli, 1988) with
convenience store clerks would indicate surface acting is less effortful because very little variability would be found in highly scripted encounters. As another example, professors may be required to display positive emotions to encourage and motivate students, negative emotions to discipline, and neutral emotions to maintain fairness and professionalism (Morris & Feldman, 1996). Thus, one would expect professors to engage in high amounts of emotional labor because they must display a wide range of emotions on the job.

The fourth dimension of emotional labor encompasses emotional dissonance. Morris and Feldman view emotional dissonance not as an outcome as past researchers have (cf. Adelmann, 1989), but as a dimension itself. They argue that overcoming mismatches in felt emotions and organizational display rules are much more laborious than when one is displaying the emotions truly felt.

In summary, Morris and Feldman (1996) focus not only on the process of overcoming emotional dissonance, but also on the effort that is required to do so. Deep acting allows one to actually overcome emotional dissonance, but requires a great deal of effort in order to do so. Surface acting, on the other hand, never allows one to overcome dissonance, but can essentially be done automatically with very little volitional control.

To this point, emotional labor has been conceptualized five different ways. After examining all of these conceptualizations, three distinct aspects emerge. These three aspects are: internal states, internal processes, and external behaviors. Internal states are first comprised of actual felt emotions (Glomb & Tews, 2004). This felt emotion acts a reference to which the emotion to be displayed is compared. Sometimes the emotion to
be displayed matches the felt emotion, but oftentimes it does not. When an employee encounters a display rule that does not match the felt emotion the internal state now represents the discrepancy between the felt emotion and the emotion to be displayed. When a discrepancy is present internal processes take over to reduce the discrepancy. The internal processes are comprised of surface acting, deep acting, and suppression of inappropriate emotions. Both surface acting and deep acting represent emotion regulation strategies employees may use to reduce emotional dissonance. Taken together this literature review leads to the following hypothesis:

H2a: Mood will be negatively related to surface acting such that as mood becomes more negative higher levels of surface acting will be reported.

H2b: Mood will be negatively related to deep acting such that a negative mood will be associated with higher reports of deep acting.

These processes then result in an outward behavior that the customer perceives as a manifestation of positive emotions. This perception then leads to mimicry and actual positive mood and emotions felt by the customer through the emotional contagion process described earlier.

Based on this premise, it seems plausible that the emotional labor processes of surface acting and deep acting should be positively related to important outcomes of customer satisfaction, tipping behavior, and deviation from normal tipping behavior. Indeed, some research has linked the above mentioned process to these outcomes.

For example, Groth, Hennig-Thurau, and Walsh (2009) surveyed 285 customer-employee dyads. These researchers provided a customer and employee survey to a
number of colleagues and friends. These people then went to a place of business and recruited the employee with whom they interacted with into the study. Employees who agreed to participate completed their portion of the survey immediately upon providing some service to the customer. The customer also completed his or her portion of the survey after receiving service. Constructs assessed in the survey included: surface acting, deep acting, customer service, and several other constructs less relevant to the present dissertation. Results revealed that employees who reported engaging in higher levels of deep acting received higher ratings of customer satisfaction. When surface acting was entered as a predictor of satisfaction, no significant relationship was uncovered. The authors suggest that deep acting results in a more genuine emotional display than surface acting which could lead to higher reports of customer satisfaction. Furthermore, the authors argued that employees using higher levels of surface acting may leak their true emotional experience which could mitigate any benefits the employee gains by faking positive emotions.

In an earlier study, Hennig-Thurau et al. (2006) instructed employees in a simulated service encounter to engage in either surface acting or deep acting. The degree to which employees smiled was also manipulated. These employees then interacted with customers who provided ratings of customer satisfaction and loyalty. Neither surface acting nor deep acting was directly related to ratings of customer satisfaction. Instead, the authors found that these effects worked through employee-customer rapport. Employees instructed to deep act were more likely to build rapport with customers than
were those instructed to surface act; rapport building was then related to higher levels of satisfaction.

Finally, in a two study paper published by Grandey, Fisk, Mattila, Jansen, and Sideman (2005), the authors tested experimentally, and with an experience sampling design, whether surface acting and deep acting influence ratings of customer satisfaction. In the first study, Grandey et al. showed simulated employee-customer encounters to research participants in which the display authenticity and the busyness of the establishment were manipulated. The authors argued that deep acting results in more authentic displays than surface acting. As such, display authenticity may be viewed as a proxy for surface acting and deep acting with high levels of authenticity representing deep acting. Participants in the study viewed one of four conditions (busyness: high vs. low; authenticity: low vs. high) and provided an assessment of how satisfied they would have been in a similar situation. Results revealed a significant busyness by authenticity interaction such that participants indicated they would have been more satisfied when busyness was high and the employee was more authentic. When busyness was low authenticity made no difference. This finding is interesting in that customers seem to value authenticity more when the employee is under stress.

In the second study, the authors measured the authenticity of 64 servers and assessed the satisfaction of 255 customers nested within those servers. Customers provided both the authenticity and satisfaction ratings. They modeled the relationship between authenticity and satisfaction using hierarchical linear modeling and found a significant main effect of authenticity on satisfaction. Servers who were rated as more
authentic were also apt to have customers report higher levels of satisfaction. Given the fact that the customer provided both authenticity and satisfaction ratings simultaneously it is impossible to determine if authentic displays resulted in higher levels of satisfaction or if those customers who were more satisfied rated authenticity as higher through some attributional process.

While the findings presented above are somewhat inconclusive, the general consensus is that higher levels of deep acting should be related to higher ratings of customer satisfaction and possibly higher than normal tipping behavior. It is less clear whether higher levels of surface acting will result in any change in customer satisfaction. Studies examining whether emotional labor predicts customer satisfaction have either manipulated the acting strategy or treated the construct as a bipolar construct in which authenticity (deep acting) represents one pole and inauthenticity (surface acting) represents the other pole. Since higher levels of surface acting should result in more smiling and other positive emotional displays it seems reasonable that this should be associated with higher customer satisfaction and higher than normal tipping behavior. Thus, the following hypotheses are presented:

H3a: Surface acting will be positively related to customer satisfaction.
H3b: Surface acting will be positively related to tip percentage.
H3c: Surface acting will be positively related to tip deviation.
H3d: Deep acting will be positively related to customer satisfaction.
H3e: Deep acting will be positively related to tip percentage.
H3f: Deep acting will be positively related to tip deviation.
To this point, I have presented hypotheses on the relationship between mood and customer satisfaction, tip percentage, and tip deviation. I have also argued that mood would be negatively related to emotional labor strategies of surface acting, deep acting, and suppression. Recall that these hypotheses were based on the control theory perspective described by Diefendorff and Gosserand (2003). I then outlined research showing the relationship between emotional labor acting strategies and customer satisfaction and presented the hypotheses immediately above. Combined, these hypotheses compose a model in which mood is related to customer satisfaction, tip percentage, and tip deviation through emotional labor acting strategies. As such, I present the following hypotheses:

H4a: Surface acting will partially mediate the relationship between mood and customer satisfaction such that a decreased mood will be associated with higher levels of surface acting which will in turn be associated with higher ratings of customer satisfaction.

H4b: Surface acting will partially mediate the relationship between mood and customer satisfaction such that a decreased mood will be associated with higher levels of surface acting which will in turn be associated with a higher tip percentage.

H4c: Surface acting will partially mediate the relationship between mood and customer satisfaction such that a decreased mood will be associated with higher levels of surface acting which will in turn be associated with increased positive tip deviation.
H4d: Deep acting will partially mediate the relationship between mood and customer satisfaction such that a decreased mood will be associated with higher levels of deep acting which will in turn be associated with higher ratings of customer satisfaction.

H4e: Deep acting will partially mediate the relationship between mood and customer satisfaction such that a decreased mood will be associated with higher levels of deep acting which will in turn be associated with a higher tip percentage.

H4f: Deep acting will partially mediate the relationship between mood and customer satisfaction such that a decreased mood will be associated with higher levels of deep acting which will in turn be associated with increased positive tip deviation.

Put slightly differently, a novel prediction concerning these hypotheses is that mood is expected to have a positive direct effect on customer outcomes and an indirect negative effect on the outcome through the decreasing use of the acting strategies.

Effort and Emotional Labor

Above, I presented a number of emotional labor conceptualizations. Along with working to clearly define emotional labor, researchers have also sought to simultaneously determine which acting method was most adaptive. One means to determine the stressful nature of each acting method is to examine the effort required to engage in surface or deep acting. As noted, Morris and Feldman (1996) felt so strongly that emotional labor is an effortful event that they included effort in their definition of the construct. Thus, effort to display organizationally desired emotions is an important part of emotional labor, but what is less clear is which strategy requires more effort. Research seems to show mixed results.
First, Morris and Feldman (1996) argued that deep acting is more effortful than surface acting because one must actively generate positive (or negative) images and work to actually feel those emotions, thus requiring energy. Morris and Feldman also argued that effort is partially determined by the intensity and duration of the emotion to be displayed. Instances that require very intense emotional displays, as well as those that last a long time, are thought to be more effortful. Based on this thinking, Rafaeli and Sutton (1988) and Rafaeli (1989) actually showed that individuals who use surface acting strategies tend to engage in very short and highly scripted encounters with customers. Thus, according to Morris and Feldman’s theory, which is supported by Rafaeli and Sutton, surface acting requires less effort than deep acting.

Another study supporting this contention indicates that individuals with greater emotional resources are more likely to deep act and those with fewer resources are more likely to surface act (Liu, Prati, Perrewe, & Farris, 2008). The authors used emotional intelligence (EI) and negative affect (NA) as maximum and minimum proxies for emotional resources. They surveyed 574 employees and managers from 29 retail stores of a single organization. Participants completed paper and pencil measures of EI, NA, emotional labor, as well as a number of other measures not pertinent to the present dissertation. Individuals who scored high on a measure of emotional intelligence were said to have abundant emotional resources and those that scored high on negative affect were said to be lacking emotional resources. Extending this study would seem to indicate that deep acting may actually draw more resources than surface acting because only those
with abundant resources deep act and that as individuals become depleted they may
switch from deep acting to surface acting.

Other research seems to contradict the arguments of Morris and Feldman and
findings of Rafaeli and colleagues and Liu et al. Yao (2005) argued that while deep
acting requires one regulatory event (calling forth the necessary images), surface acting
actually requires three regulatory events and is thus more effortful. Yao indicated that
employees who engage in surface acting must suppress the true emotion they are feeling.
They must initiate the emotion they are to display and they must continually battle the
dissonance between the felt emotion and the displayed emotion. Supporting this view is
the fact that surface acting has been consistently positively related to emotional
exhaustion (see Brotheridge & Lee, 2000; Brotheridge & Grandey, 2002; Gosserand,
2003; Grandey, 2003; Judge, Woolf, & Hurst, 2009; Kruml & Geddes, 2000). In the next
section I discuss in more detail outcomes associated with emotional labor.

Outcomes of Emotional Labor

A number of consequences of emotional labor have been proposed and studied.
Generally, these outcomes fall into one of two categories or dimensions as proposed by
Grandey (2000). Grandey (2000) proposed a stress and well being dimension and a work
behavior dimension. In her theoretical piece, Grandey (2000) proposed that burnout and
lower job satisfaction are outcomes associated with the stress and well-being dimension.
Maslach and Jackson (1986) identified three distinct states that make up burnout. They
are emotional exhaustion, depersonalization, and diminished personal accomplishment.
Emotional exhaustion has been shown to have a positive relationship with surface acting,
and with suppressing negative emotions (Brotheridge & Grandey, 2002). Furthermore, researchers have shown that depersonalization has a positive relationship with surface acting and suppressing negative emotions. Personal accomplishment has been shown to have a positive relationship with frequency of interactions, intensity of expression, variety of expression, duration of interactions, displaying positive emotions, and deep acting. Depersonalization has also been shown to have a negative relationship with surface acting (Brotheridge & Grandey, 2002). These results indicate that higher levels of emotional labor assessed through surface acting, not deep acting, are associated with higher levels of psychological strain. Does emotional labor have an effect on physical health as well?

There appears to be a positive relationship between various aspects of emotional labor and physical symptoms (Schaubroeck & Jones, 2000; Morris & Feldman, 1997). Schaubroeck and Jones (2000) found a positive relationship between perceptions of strict display rules (must show positive emotions and suppress negative emotions) and physical symptoms. Their findings suggest that when one perceives the requirement to display positive emotions and suppress negative emotions overall physical health deteriorates.

The second outcome dimension of emotional labor focuses on work outcomes (Grandey, 2000). Customer service performance is one outcome measure of emotional labor. Ashforth and Humphrey (1993) argued that for emotional labor to actually occur, the employee must do a good job at convincing the customer that the employee is in a good mood. Gosserand (2003) found no significant relationship between supervisor ratings of customer service performance and surface acting or deep acting. However,
Totterdell and Holman (2003) used an experience sampling methodology and found a significant positive relationship between deep acting and a self-report measure of employee performance. Clearly a major flaw with this study is the use of self-report measures of both the predictor and criterion variables. This is especially true with the criterion variable, performance, as employees are very likely to have inflated perceptions of their performance (Farh & Werbel, 1986).

In all, these studies provide a pretty clear picture of the nature of surface acting and deep acting. Generally, surface acting is associated with more negative outcomes (Brotheridge & Grandey, 2002; Morris & Feldman, 1997), while deep acting seems to be related to more positive outcomes (Brotheridge & Grandey, 2002; Totterdell & Holman, 2003). Thus, surface acting appears to be more maladaptive than deep acting. Clearly more research is needed examining the impact of acting methods on more proximal outcomes over time.

**Ego Depletion**

Emotional labor requires one to augment his or her emotional displays to customers. This requires employees to engage in a form of self-regulation. Clearly, research has linked emotional labor to negative outcomes such as emotional exhaustion, but the broader self-regulation literature offers other outcomes that emotional labor researchers should consider. One such outcome is called ego depletion (Muraven, Tice, & Baumeister, 1998).

One characteristic that sets human beings apart from other species is the ability to adapt quickly to changes in the environment by regulating responses to various stimuli.
By controlling their thoughts, feelings, and behaviors, humans are able to override seemingly innate responses to stimuli such as love, anger, hunger, etc. (Baumeister, 2002). For example, a restaurant server who is accosted by an angry customer is able to override the natural response to repay the customer with anger, and instead brush aside the anger-filled comments and even go so far as to provide the customer with exceptional service. The server in this example engaged in a number of self-regulatory acts.

Baumeister (2002) defined self-regulation as “the capacity to alter or override one’s responses, including thoughts, emotions, and actions” (p. 129). Self-regulation is a complex process, as evidenced by several models that explain the process (see Carver & Scheier, 1998; Higgins, 1987, 1996; Mischel, 1996; Muraven & Baumeister, 2000; Trope & Liberman, 2000, 2003). The present paper focuses on one model of self-regulation - ego depletion.

In the example described above, the server was able to resist returning angry comments and even more harmful behaviors because of self-regulation. Although the result of self-regulation was seemingly benign for the server, research conducted by Baumeister indicates that the self-regulation in which the server engaged was, in fact, costly. Baumeister and colleagues argue that acts of self-regulation consume resources from a common pool of energy or strength. Reductions in these resources then limit future acts of self-regulation (see Muraven & Baumeister, 2000, for a review). Baumeister calls this reduction in resources ego depletion.

Over the past 10 years several researchers, including Baumeister, have tested the concept of ego-depletion (see Baumeister, 2002, for a review). Other researchers have
put forth competing models (cf. Pashkevich, 2005). In addition to establishing the validity of ego depletion, researchers have sought to identify antecedents, consequences, and moderators of ego depletion (see Martijn, Tenbült, Merckelbach, Dreezens, & de Vries, 2002; Webb & Sheeran, 2003; Yao, 2005). In the following paragraphs I will review the literature on ego depletion and will specifically examine the validity of ego depletion, as well as predictors and outcomes of ego depletion.

Muraven, Tice, and Baumeister (1998) first proposed that self-regulation draws on a finite pool of regulatory resources. They likened this resource pool to a muscle that becomes fatigued with use and argue that as fatigue sets in, one’s ability to self-regulate becomes diminished, and like a muscle, requires a period of recovery after the exertion. Furthermore, this pool is common to all self-regulatory patterns—even those that guide physical activities. Thus, they hypothesized that acts of self-regulation would inhibit future acts of self-regulation, even in different contexts and domains.

In addition to establishing their model, Muraven et al. (1998) wanted to test competing models to determine which model best predicted consecutive acts of self-regulation. They proposed three competing models. The first model conceptualized self-regulation as a master schema that provides the necessary information one needs for self-regulation. Muraven et al. argued that if this model holds true, one act of self-regulation might have a priming effect. This priming effect should lead to better self-regulation on subsequent tasks (Higgins, King, & Maven, 1982). Another competing model they established was that self-regulation is a learned skill. In general, skills are gradually mastered with practice, but essentially remain constant over consecutive trials. Thus,
under this model, one act of self-regulation would have no effect on future acts of self-regulation. The final model proposed indicated that self-regulation “is a limited, but constant capacity” (Muraven et al., 1998, p. 776). In this model, simultaneous acts of self-regulation would inhibit each other, but resources would be available for a new act when the first is done. Thus, this model identified no long-term effects of self-regulation; only concurrent acts of self-regulation would be affected.

In order to test all four proposed models, Muraven et al., conducted a series of experiments. In the first study participants were randomly assigned to three groups. Each of the three groups then viewed a film clip which depicted a sorrowful storyline. One group was given no regulatory instructions and served as the control group. The second group was told to “really get into the movie” (Muraven et al., 1998, p. 777) and to experience as much emotion as possible. The third group was told to reduce all emotional expression as much as possible during the movie. After viewing the clip, participants were told to squeeze a handgrip for as long as possible. Results from this study revealed that both emotional regulation groups released the handgrip significantly faster than the control group. Thus, both positive and negative emotional regulation led to performance decrements in an unrelated physical task.

While the first study tested emotional regulation, Muraven et al. (1998) tested a different form of self-regulation in the second study – thought suppression. In this study, the researchers randomly assigned participants to two groups. Participants in the experimental group were instructed to suppress thoughts of a white bear while writing down everything that came to mind (see Wegner, Schneider, Carter, & White, 1987).
Participants in the control condition were told to write whatever came to mind. After six minutes, participants took part in an unsolvable anagram task. Participants in the experimental condition gave up significantly faster than participants in the control group. These findings indicate that acts of self-regulation also affect subsequent cognitively based self-regulation acts. In yet another thought suppression experiment, participants in the experimental group were subsequently unable to suppress smiling and laughing during a humorous film clip. In the final study participants were asked to write autobiographical stories about situations in which they were able to control their emotions and about other situations in which they lost control of their emotions. The researchers hypothesized that participants would report feeling more tired after completing stories about situations in which they lost control. Participants rated writing about situations in which they lost control significantly more effortful than writing about situations in which they were able to maintain control.

Based on the results of these four studies, the authors concluded that self-regulation does in fact act like a muscle under fatigue. That is, one act of self-regulation leads to decrements in subsequent self-regulatory tasks. Furthermore, acts of self-regulation in one domain can affect acts of self-regulation in other domains. Therefore, acts of self-regulation seem to fit the strength model proposed by Muraven et al. (1998) better than the schema, skill, and constant capacity models also proposed.

In another set of experiments, Baumeister, Bratslavsky, Muraven, and Tice (1998) provided additional evidence for ego depletion. In one study hungry participants (all participants had skipped a meal prior to the experiment) were randomly assigned to three
groups. Participants in the experimental condition were placed in a room that smelled of chocolate chip cookies and were seated around a table that had a plate of cookies and chocolates and a bowl of radishes. Participants in this group were instructed to only eat the radishes. The other two groups served as controls. One control group was placed in a room with cookies and was told they could eat the cookies. The other group was in a room removed from the sights and smells of cookies. After five minutes all participants took part in an unsolvable anagram task. Participants in the experimental condition gave up significantly faster than either control group. This study provided additional evidence that acts of self-regulation draw on a common set of self-regulatory resources, therefore limiting resources for future self-regulatory tasks.

To this point, research on ego depletion has focused on acts of self-regulation affecting subsequent acts of self-regulation. Researchers have questioned whether other cognitive tasks may be affected by ego depletion. Indeed, Schmeichel, Vohs, and Baumeister (2003) examined the role of ego depletion in information processing. They hypothesized that complex cognitive tasks such as problem solving draw on the same resources that self-regulatory resources draw on. Through a series of experiments, Schmeichel et al. were able to show that participants in a state of ego depletion did significantly worse on tasks requiring complex cognitive processing. They provided initial evidence that the self has a limited pool of resources for a wider range of tasks than just self-regulation.

Clearly, Baumeister and his colleagues have provided evidence for ego depletion. One of the next steps researchers undertook was identifying predictors of ego depletion.
To do so, Muraven, Baumeister, and Tice (1999) found that practicing self-regulatory tasks decreased ego depletion in participants. Other researchers have explored moderators of ego depletion. Martijn, Tenbült, Merckelbach, Dreezens, and de Vries (2002) found that by manipulating one’s schema about the effects of self-regulation they could decrease ego depletion. These researchers randomly assigned participants to three groups (a control group and two experimental groups). Both experimental groups viewed a film clip intended to evoke an emotional response. Both groups were asked to limit their emotional responses to the clip. The first experimental group then completed a handgrip task. The second experimental group (expectancy group) was told that oftentimes people have a misconception about the effort involved in viewing emotional films. They were also told that recent research found that viewing such films may in fact make people perform better on subsequent tasks. The participants then took part in the same handgrip task. The researchers found that participants in the expectancy group actually improved their performance from the baseline on the handgrip exercise. The first experimental group provided additional evidence for ego depletion. Thus, by activating and manipulating one’s schema for control related tasks, these researchers were able to eliminate the resource reducing effects of self-regulation.

Yet another construct said to reduce ego depletion is implementation intentions (Webb & Sheeran, 2003). Implementation intentions refer the process of achieving goals. Implementation intentions take the form of if/then statements such that when one encounters a given situation (if) s/he initiates a set response to that situation (then). In
doing so, s/he relinquishes the need for cognitive control over the self because the response is automatic (Gollwitzer, 1996, 1999).

Webb and Sheeran (2003) tested the effect of implementation intentions on ego depletion. They randomly assigned participants to three groups (control group, ego depletion group, and implementation intentions group). All participants were given the Stroop task. Participants in the ego depletion group were asked to identify the color of the word as quickly as possible. Participants in the implementation intentions group were also asked to say the color as quickly as possible, but were told to neglect the meaning of the word and to focus on the second letter of the word. Finally, participants in the control group were asked to read the word. After completing the Stroop task, participants were asked to complete an unsolvable geometric task. Results of the study showed participants in the implementation intentions and control conditions persisted significantly longer on the unsolvable geometric task than participants in the ego depletion condition. Thus, by eliminating the need for cognitive control in the Stroop task participants were able to overcome ego depletion.

The two studies just described call into question just how effortful self-regulation really is. Baumeister (2002) argued that one could view ego depletion as being the complete exhaustion of self-regulatory resources, or that ego depletion occurs when one is trying to conserve resources. Evidence suggests that ego depletion is not exhaustive; rather it acts to conserve resources. Muraven (1998) found that when participants initially engaged in a self-regulatory task were offered great sums of money they had better performance on subsequent self-regulatory tasks. In a second study, Muraven
(1998) told participants who had just engaged in a self-regulatory act that they would engage in two more acts. Participants gave up much sooner in the second act presumably to save resources for the third act. Thus, it appears as though the self tries to conserve resources for future self-regulation by entering a state of ego depletion.

Researchers have been able to show that ego depletion occurs after acts of self-regulation. Until recently, however, nobody has provided a mechanism explaining how and why ego depletion occurs. Indeed, only one study was found explaining how ego depletion occurs (Gailliot, Baumeister, DeWall, Maner, Plant, Tice, Brewer, & Schmeichel, 2007). These researchers found that engaging in acts of self-regulation depleted blood-glucose levels. Glucose is an essential source of energy for the brain (Siesjo, 1978). Thus, one would expect lower levels of glucose in the blood would prohibit future acts of self-regulation. Indeed, Gailliot et al. found that participants with low blood-glucose levels performed significantly worse on self-regulation tasks. Furthermore, by providing participants with glucose in the form of lemonade, self-regulatory resources were replenished. These findings provide physiological evidence of a central source of energy that acts of self-regulation draw upon.

The literature has made clear that ego depletion is a phenomenon humans experience in order to conserve self-regulatory resources and one mechanism operating behind mechanism is the consumption of glucose. Gailliot et al. (2007) found that resupplying participants with glucose resulted in resource recovery. Other researchers have sought to identify other mechanisms and ways to allow depleted individuals to recover. For example, Tice, Baumeister, Shmueli, and Muraven (2007) drew on Thayer’s
(1989) biopsychological model of emotion which states that emotions are linked to arousal. Tice et al. (2007) argued that positive emotions provide perceptions of energy through arousal. They argued that people who are in a state of ego depletion can replenish self-regulatory resources by experiencing mood-lifting events. They tested the hypothesis that positive affect replenishes self-regulatory resources by conducting four separate experiments. Each experiment involved a self-regulation manipulation followed by a mood manipulation. The outcome variable for each experiment was a subsequent self-regulation task. For example, in study one participants first completed a cognitive thought listing exercise. For this exercise participants in the control condition were told to list each thought that came to mind for a period of five minutes. In the experimental condition participants were given the same instructions, but were told to refrain from thinking of a white bear. Upon completion of this task, half of the participants in each condition were given a small gift of candy while the other half were given a receipt for participation. Each participant then was placed in a room and given the opportunity to drink a vinegar-Kool-Aid solution that was said to improve their health.

Results from the study revealed a significant ego depletion by mood interaction such that participants who were ego depleted (told to not think of white bear) and received the gift (positive mood) drank more vinegar-Kool-Aid solution than all other groups, except those that did not receive the gift and were not depleted.

The findings from the study described above along with the three remaining studies revealed that a positive mood allows individuals to recover from a state of ego depletion to engage in further acts of self-regulation. While these findings suggest that a
positive mood allows individuals to recover from a state of ego depletion, the theory Tice et al. used to support the findings suggests that a positive mood should be related to lower levels of ego depletion to begin with. Thus, based on the findings of Tice et al., and Thayer’s biopsychological theory, the following hypothesis is proposed:

H5: There will be a negative relationship between mood and ego depletion such that higher mood ratings will be associated with lower reports of ego depletion.

In summary, acts of self-regulation such as emotional regulation lead to a state of diminished resources called ego depletion. People in this state perform significantly worse on subsequent self-regulatory tasks. Furthermore, ego depletion leads people to do worse on tasks other than self-regulation. Specifically, complex cognitive tasks such as problem solving were negatively affected by ego depletion. The effects of self-regulation on ego depletion can be mitigated by introducing implementation intentions or by providing an expectancy which serves to reduce the perceived effect of self-regulation on ego depletion. Ego depletion seems to act as a way for the self to conserve resources for future self-regulatory tasks. Finally, recent evidence suggests that glucose is indeed the energy source required for self-regulation.

Based on both the emotional labor and ego depletion literature, it seems clear that the emotion regulation strategies of deep acting and surface acting should be linked to ego depletion. Thus, the following hypotheses are presented:

H6a: Surface acting will be positively related to ego depletion such that individuals engaging in higher levels of surface acting will report more ego depletion.
H6b: Deep acting will be positively related to ego depletion such that individuals engaging in higher levels of deep acting will report more ego depletion.

Research indicates that ego depletion may serve as an outcome of both mood (Tice et al., 2007) and emotional labor (Goldberg & Grandey, 2007; Yao, 2005). Furthermore, using the Control Theory perspective, mood was hypothesized to be a predictor of emotional labor. Thus, it stands to reason that emotional labor strategies of surface and deep acting should mediate the relationship between mood and ego depletion. As such, I present the following hypotheses:

H7a: Surface acting will partially mediate the relationship between mood and ego depletion such that a more depressed mood will result in higher reports of surface acting which will be related to higher reports of ego depletion.

H7b: Deep acting will partially mediate the relationship between mood and ego depletion such that a more depressed mood will result in higher reports of deep acting which will be related to higher reports of ego depletion.

In addition to serving as an outcome in the present dissertation, ego depletion may also be a predictor of customer satisfaction. It stands to reason that more highly depleted individuals should be less able to regulate their mood and emotions resulting in less satisfied customers. Although I was unable to uncover any research that specifically examined the relationship between ego depletion and customer satisfaction, one study did examine the relationship between emotional exhaustion and customer satisfaction. Specifically, Dormann and Kaiser (2002) regressed ratings of customer satisfaction derived from parents on a number of personal and work characteristics provided by
teachers. Results from the study indicated a strong positive relationship between emotional exhaustion and customer satisfaction. Thus, instead of receiving lower ratings of satisfaction, emotionally exhausted teachers actually received higher ratings of satisfaction from parents. The authors argued that exhausted teachers expended more resources than non-exhausted teachers and that the extra work made for more satisfied parents. Clearly, longitudinal research is needed to understand the true nature of the relationship. Nevertheless, this finding provides a basis for the following hypothesis:

H8a: There will be a positive relationship between ego depletion and customer satisfaction such that higher ratings of ego depletion will be associated with higher reports of customer satisfaction.

H8b: There will be a positive relationship between ego depletion and tip percentage such that higher ratings of ego depletion will be associated with higher tip percentages.

H8c: There will be a positive relationship between ego depletion and tip deviation such that higher ratings of ego depletion will be associated with higher tip deviation.

Previously, I hypothesized that emotional labor acting strategies of deep and surface acting would be related to customer outcomes. I also hypothesized that deep acting and surface acting would be positively related to ego depletion and that ego depletion would be related to customer outcomes. Given the theoretical and demonstrated temporal ordering of the relationship between self-regulation (emotion regulation) and ego depletion presented by Baumeister and colleagues (Baumeister, 2002;
Gailliot et al., 2007; Muraven et al., 1998), it stands to reason that ego depletion will mediate the relationship between emotional labor acting strategies and customer outcomes. As such, I present the following hypotheses:

H9a: Ego depletion will partially mediate the relationship between surface acting and customer satisfaction such that higher reports of surface acting will be associated with greater levels of ego depletion which will in turn be related to increased customer satisfaction.

H9b: Ego depletion will partially mediate the relationship between surface acting tip percentages such that higher reports of surface acting will be associated with greater levels of ego depletion which will in turn be related to increased tip percentages.

H9c: Ego depletion will partially mediate the relationship between surface acting tip deviations such that higher reports of surface acting will be associated with greater levels of ego depletion which will in turn be related to increased tip deviations.

H9d: Ego depletion will partially mediate the relationship between deep acting and customer satisfaction such that higher reports of deep acting will be associated with greater levels of ego depletion which will in turn be related to increased customer satisfaction.

H9e: Ego depletion will partially mediate the relationship between deep acting tip percentages such that higher reports of deep acting will be associated with greater levels of ego depletion which will in turn be related to increased tip percentages.
H9f: Ego depletion will partially mediate the relationship between deep acting tip deviations such that higher reports of deep acting will be associated with greater levels of ego depletion which will in turn be related to increased tip deviations.

Combining Mood, Emotional Labor, Ego Depletion, and Customer Satisfaction

Given the linkages between mood, emotional labor, ego depletion, and customer satisfaction, and the theoretical justifications for each of those linkages, it is reasonable to hypothesize an order of events in which mood is linked to customer satisfaction through emotional labor and ego depletion.

As I have previously argued and supported with literature, mood should be linked to ratings of customer satisfaction and tipping behavior through an emotional contagion process. Through a self-regulation process, employees use surface acting and deep acting to regulate their emotional displays in order to satisfy organizationally mandated display rules. This regulation then leads to a state of ego depletion which should in turn be related to ratings of customer satisfaction, with individuals engaging in more emotional labor reporting higher levels of ego depletion, but also receiving greater tips and ratings of customer satisfaction. Thus, the relationship between mood and customer outcomes is mediated by emotional labor and ego depletion which leads to the following hypothesis:

H10a: A three path indirect effect in which mood negatively predicts surface acting which then positively predicts ego depletion which leads to higher ratings of customer satisfaction will differ significantly from zero.
H10b: A three path indirect effect in which mood negatively predicts surface acting which then positively predicts ego depletion which leads to higher tip percentages will differ significantly from zero.

H10c: A three path indirect effect in which mood negatively predicts surface acting which then positively predicts ego depletion which leads to higher tip deviation will differ significantly from zero.

H10d: A three path indirect effect in which mood negatively predicts deep acting which then positively predicts ego depletion which leads to higher ratings of customer satisfaction will differ significantly from zero.

H10e: A three path indirect effect in which mood negatively predicts deep acting which then positively predicts ego depletion which leads to higher tip percentages will differ significantly from zero.

H10f: A three path indirect effect in which mood negatively predicts deep acting which then positively predicts ego depletion which leads to higher tip deviation will differ significantly from zero.

Combined, the 10 hypotheses presented above, if supported, offer a unique insight onto the processes that occur when a customer service employee interacts with a customer. While hypothesis 10 combines the individual components into a previously untested model, its contribution to the literature is insubstantial. Furthermore, it offers only a static glimpse of what occurs at one point in time and does little to show how these processes unfold over time. A model examining the relationship among the variables over time is needed to make a more significant contribution to the literature. In the
following section I describe how time might moderate each of the relationships presented above, and in doing so I seek to fill a substantial gap in the emotional labor literature.

Moderating Effects of Time

One common vein running through the variables of interest in this dissertation is energy and the expenditure of it. Mood contains a component of energy (Wilhelm & Schoebi, 2007), and ego depletion is a state of diminished resources or energy (Baumeister, Vohs, & Tice, 2007). Morris and Feldman (1996) and Baumeister and colleagues have shown that regulating emotions consumes energy or resources. Thus, mood and ego depletion share a common element – energy, which is consumed by emotion regulation. The common element of energy may be the cause of any relationship between mood and ego depletion.

Emotion regulation is an effortful process that consumes resources or energy (Morris & Feldman, 1996). As previously noted, a number of studies conducted by Baumeister and colleagues support this assertion (see Baumeister 2002 for review). Unfortunately, the studies conducted by Baumeister and colleagues examine the depleting effects of only one act of self-regulation. Customer service employees often engage in numerous acts of self-regulation over the course of an entire shift. Thus, these employees are constantly expending energy or resources in an effortful manner. Based on this premise, it is reasonable that energy resources will become depleted over time through effortful self-regulation, making time a proxy for energy.

Based on this logic, mood is likely to decline over the course of the evening as resources are utilized regulating emotions. Declining mood should result in higher levels
of emotional labor as employees recognize a larger discrepancy between the felt or displayed emotion and the emotion to be displayed as dictated by the display rules. This regulation then results in higher levels of ego depletion or a decline in energy. Employees that make it through this process successfully induce a positive mood in customers who then respond with higher ratings of satisfaction and greater tips. Employees experiencing a negative mood who fail to actively regulate their emotions should experience lower levels of ego depletion because they have given up and choose to express the emotion they truly feel. This in turn should result in lower ratings of customer satisfaction as well as lower tip percentages and tip deviation. Thus, each step of the three-path mediation model described above will be moderated by time such that the relationships will become stronger as the evening progresses (see Figure 1).
In the model described above and depicted in Figure 1, two different emotion regulation strategies may be used. Employees may use deep acting or surface acting. Given the nature of these two strategies, it is possible that the slope of each relationship over time may differ according to which strategy is employed.

Elaborating on this idea, recall that current research indicates no relationship between deep acting and ego depletion (Yao, 2005). Furthermore, deep acting is not associated with emotional exhaustion, a possible more severe and chronic form of ego depletion. The lack of a linear relationship between these two variables could result as a function of time. Employees who engage in deep acting may initially deplete some of their self-regulatory resources (deep acting is a form of self-regulation). However, once the employee is able to call forth and experience the emotion to be displayed, very little additional self-regulation is needed. The employee is actually experiencing a more positive mood or emotion. Thus, each subsequent customer interaction should require little acting which in turn would use few additional self-regulatory resources (although energy would still be consumed during the interaction). If graphed, the relationship between deep acting and ego depletion would be similar to the natural log graph. That is, the slope of deep acting would increase for a period and then would level off. This curvilinear relationship should hold true for the entire series of relationships in the deep acting path. That is, the employee using the deep acting strategy may initially experience
a negative mood. This negative mood results in higher levels of deep acting which
results in higher levels of ego depletion and greater customer satisfaction. However, over
time the deep acting method works to change the mood of the employee. This results in
no further need to deep act, a leveling off of ego depletion, and a leveling off of customer
satisfaction.

Surface acting on the other hand requires three acts of regulation (Yao, 2005) and
never actually resolves the discrepancy between the felt and displayed emotion. As such,
each relationship in this path should continue to strengthen as energy is consumed
regulating emotions. Thus, the following hypotheses are presented:

H11a: Time will moderate the three-path relationship between mood, surface
acting, ego depletion, and customer outcomes such that each relationship will
strengthen over the course of the shift.

H11b: Time will moderate the three-path relationship between mood, deep
acting, ego depletion, and customer outcomes such that each relationship will be
strong at first, but will gradually diminish over the course of the evening.

Having presented a series of hypotheses with theoretical justifications for each
hypothesis, I now present a brief overview of how I tested the hypotheses. The present
dissertation used a nonexperimental multilevel design. Participants in the study were
restaurant servers and the customers they served. Restaurant servers are a population
frequently used in studies examining service situations because the server’s primary job
role is to provide customers with table service. Related to the present paper, Rind and
Strohmetz (2001) argued that servers may increase tips by inducing positive moods in
customers which results in the customer being more willing to open his or her pocketbook. Supporting this argument was a finding published by Tidd and Lockard (1978) which indicated that servers received a larger tip percentage when they presented a large open-mouthed smile. Thus, restaurant servers seem to be the perfect population to assess because of previous findings indicating mood as an important predictor of tip percentage.

With the population established, I now turn to the measures and procedures. Measures of mood, emotional labor, and ego depletion were gathered from servers immediately after the final interaction with a given customer. Measures of customer satisfaction and tip deviation were collected from customers immediately before they departed the restaurant. Additionally, the tip percentage was calculated for each table after the customer left the table. All of these measures were gathered at the same table for each successive customer over the course of one evening. This design allows for the testing of all of the hypotheses presented above.
CHAPTER TWO

METHOD

Participants

The present dissertation utilized a convenience sample of servers recruited from three local restaurants and the customers they served. A total of 53 servers were recruited, however, one server declined participation. Additionally, data from one server was lost due to an equipment malfunction. Thus, data were collected from a total of 51 servers. Servers ranged in age from 18 to 47 with a mean age of 23.60 years and a standard deviation of 5.67 years. The server sample was comprised of 31 females and 19 males and they had a mean organizational tenure of 15.88 months ($SD = 16.34$) and a mean job tenure of 22.99 months ($SD = 27.11$).

In terms of customers, 297 individuals were recruited with 287 agreeing to participate in the study. The mean customer age was 44.05 years with a standard deviation of 18.01 years. A total of 148 female customers and 130 male customers participated with 9 customers failing to provide demographic information. No sex or gender differences were uncovered between customers dining early in the evening as opposed to later in the evening. Customers who agreed to participate in the study received a complimentary dessert.

The 287 customers were nested within 216 tables yielding an average of 1.38 customers per table. Servers on average waited on 5.62 customers nested within 4.17 tables across the evening.

Measures
Emotional Labor

Emotional labor takes place via one of two primary mechanisms. Employees can either surface act or deep act, or even do both simultaneously. Additionally, employees can also suppress their true emotion which has been shown to be more related to surface acting than deep acting (Brotheridge & Lee, 2003). All three components were measured using items from Brotheridge and Lee’s Emotional Labor Scale. This scale is composed of 9 items with three items each measuring surface acting, deep acting, and suppression. Participants responded on a seven point Likert scale (1 = Strongly Disagree to 7 = Strongly Agree). An example deep acting item was “I made an effort to actually feel the emotions I needed to display to the customer.” An example surface acting item was “I showed emotions I didn’t feel.” And an example suppression item was “I concealed what I felt.” Cronbach Alphas were calculated for each of the three subscales. The alpha for surface acting was .87, for deep acting it was .73, and for suppression it was .92 (See Appendix A).

Mood

Mood was assessed using Wilhelm and Schoebi’s (2007) adaptation of Steyer, Schwenkmezger, Notz, and Eid’s (1997) Multidimensional Mood Questionnaire (MDMQ). The original version of the MDMQ consisted of 12 items assessing three mood dimensions: valence (pleasant to unpleasant), calmness (restless/under tension to calm/relaxed), and energetic arousal (tired/without energy to awake/full of energy). Wilhelm and Schoebi reduced the number of items to six to be used specifically as a
multilevel mood measure. That is, the author recognized the need for a short mood measure that can be administered multiple times daily.

Wilhelm and Schoebi used a seven point bipolar scale to assess: valence (very content to very discontent; very well to very unwell), calmness (very agitated to very calm; very relaxed to very tense), and energetic arousal (very tired to very awake; very without energy to very full of energy). Participants responded to these items in response to the question: “At this moment I feel:.” The authors collected a total of 4577 responses from 187 participants who responded to palm pilot beeps four times per day for one week. They used multilevel modeling and factor analysis to calculate the within and between person reliability and factor structure for the three subscales. Multilevel factor analyses indicated a three factor solution fit the data best for within person level data. However, a two factor solution (calmness and energy collapsed) fit the data better for between person level data. Thus, the subscales must be used appropriately depending on the level at which data will be analyzed.

The authors also assessed the sensitivity to change of each factor as well as the level-specific reliability of each factor. Results of the sensitivity analysis indicated a significant portion of the variance was explained within days with little change across days indicating the measure was sensitive to shifting moods. Furthermore, the between person internal consistency was .92 for valence and .95 for the combined calmness and energy factor. Within person internal consistency was .70 for valence and calmness and .77 for energy. The authors also assessed the reliability of a single observation controlling for average valence, calmness, and energetic arousal scores for each person.
These estimates were .66 for valence and calmness and .77 for energetic arousal. Thus, the psychometric properties of this modified scale are acceptable for use in studies assessing mood multiple times daily. The six items in the present dissertation were aggregated to form an overall mood score and the Cronbach Alpha for that scale was .91 (See Appendix B).

*State Emotional Exhaustion*

One method that has been used to assess ego depletion is to simply ask the participants how they feel. Since regulating one’s emotions can be tiring, a measure of emotional exhaustion was used to measure ego depletion. Maslach et al. (2001) developed a three factor scale of job burnout. One factor measured in the scale is emotional exhaustion. Emotional exhaustion, as measured by the Maslach Burnout Inventory (MBI), is a chronic severe feeling of being emotionally drained. Ego depletion on the other hand is a temporary state of emotional weariness. Thus, Yao (2005) modified the emotional exhaustion subscale of the MBI to measure ego depletion. The four items Yao created were: “I feel physically fatigued after dealing with the customer,” “I feel emotionally fatigued after dealing with the customer,” “Working with these customers is really a strain for me,” and “I feel frustrated by a job like this,” which will be modified to “I feel emotionally drained by a job like this” to maintain the consistency of the items. The items are measured on a 7 point Likert scale (1= very mild, barely noticeable to 7= very strong). I used Yao’s modified scale of emotional exhaustion to measure ego depletion. Cronbach’s Alpha for this scale was .76 (See Appendix C).

*Customer Satisfaction*
Customer satisfaction was assessed using a four item semantic differential scale developed by Eroglu and Machleit (1990). These authors created a scale to measure customer satisfaction in a retail setting. Wirtz and Lee (2003) compared the measure created by Eroglu and Machleit to eight other customer satisfaction scales in terms of how the scale behaves as an outcome and as a predictor of future behavior in a structural equation model. Wirtz and Lee (2003) found that the measure created by Eroglu and Machleit performed better than all of the measures except for a measure that included more items. Participants are asked to rate their experience on a 7 point bipolar scale with anchors such as “Dissatisfied” to “Satisfied” and “Unpleasant” to “Pleasant”. Cronbach’s alpha for the measure has been reported to range from .87 to .94 (Eroglu & Machleit, 1990). The Cronbach’s alpha from the present sample was .89 (See Appendix D).

Tip Percentage and Tip Deviation

In addition to acquiring customer satisfaction ratings, data were also collected on the amount of tip left for the server relative to the total check amount. Both pieces of information allowed me to calculate a tip percentage left for the server for each table. Furthermore, since tipping is a highly normative behavior (Conlin, Lynn, & O’Donoghue, 2003), a question was asked assessing the degree to which the tip percentage left for the server that evening differed from the tip percentage normally left (See Appendix D).

Demographic variables
Several demographic variables were collected. Servers were asked their age, gender, and organization and job tenure (See Appendix E). Customers were asked their age and gender (See Appendix D).

**Procedures**

First all servers were recruited from a pre-shift meeting typically held by restaurant managers to inform the servers of dinner specials and other important information. Servers who agreed to take part in the study were given an information letter describing the purpose of the study. Next, all servers completed the demographic variables and were assigned a server identification number to match demographic information with measures collected after each table interaction.

Prior to interacting with any restaurant patrons, the experimenter randomly selected two tables from the tables assigned to each of the servers for the shift. Each server and requisite tables were then assigned to the experimenter or one of three assistants who helped collect data. The experimenter or assistants explained the purpose of the study to the customers emphasizing their participation was voluntary and that they would receive a complimentary dessert for participation. The customers were then asked how the final bill would be split and each paying customer received a survey at the end of the meal.

At the end of the exchange, customers were asked to complete a measure of satisfaction, tip deviation, and demographics. Servers completed measures of mood, emotional labor, and ego depletion. Finally, the tip percentage left by the customer was
calculated. This procedure was repeated with the same two randomly selected tables throughout the course of one night.

**Analyses**

All data were analyzed using SPSS 15 and R 2.10.0. First, all independent variables, including time, were mean centered in accordance to Cohen, Cohen, Aiken and West (2003). Time was also transformed using a natural log transformation. This new variable was used to test the nonlinear effects of ego depletion on deep acting such that the specified relationship would initially be positive and significant, but would decline over the course of the evening. Next, all variables were examined for normality and for outliers. Customer satisfaction yielded a highly negatively skewed distribution. Indeed, 61.5% of all customer satisfaction ratings were a perfect 7.0. In an attempt to correct this problem, customer satisfaction ratings were reflected and a natural log transformation was completed. While this transformation reduced the skewness from -3.347 to 1.994, this non-normal distribution still resulted in a ceiling effect with very little variance to explain (see Table 1). Nevertheless, this transformed variable was still used as an outcome variable.

In addition to examining the distributions of each variable, I also examined the fixed and random predicted values and residuals to determine if any observations or individuals were exhibiting undue influence on the model. I determined two individuals who reported drastically different surface acting and ego depletion scores over the course of the shift than the rest of the sample. When these individuals were included several models failed to converge and the Hessian matrix indicated no slope variance whenever
time was added as a random effect. Screening these individuals out allowed all models to converge and resulted in significant slope variance when time was entered as a random effect for nearly every model. Once all the data were scrutinized for outliers and normality, I turned to testing relationships between variables.

Next, because participants responded to the same items multiple times throughout the evening, I employed multilevel random coefficient modeling (MRCM) to properly control for the nonindependence of error terms associated with nested data (Hofmann, 1997). MRCM differs from OLS regression by estimating and testing the additional variance terms associated with nesting or group membership. In two-level MRCM there are three variance terms that need to be estimated: intercept variance, slope variance, and random variance (Bliese, 2002). With regards to the variance terms estimated, intercept variance refers to mean differences that groups, or in the present study, individuals display on the dependent variable. Thus, in the present study, intercept variance would refer to individual differences in emotional labor, ego depletion, and customer outcomes. This type of variance is predicted by group level (individual level) or level 2 predictors. For example, this type of variance would be predicted by trait differences in server positive or negative affect had those variables been measured (Bliese, 2002).

The second estimated variance term (or group of terms) is the variance that occurs in the relationship between the IV and DV across groups (individuals across measurement occasions in the present dissertation). This term refers to the variation in slopes that occurs across individuals which differs from OLS regression because the latter
assumes a fixed slope across all individuals. Again, individual level differences might explain why the slope varies across individuals (Bliese, 2002).

The final variance term estimated in MRCM is the random variance, or the variance that occurs within groups, or in the present study, individuals across measurement occasions. Variables that vary across measurement occasions (level 1 predictors) are entered to explain differences in the outcome across occasions (Bliese, 2002). For example, server mood was entered as a predictor of server emotional labor, ego depletion, and customer satisfaction, tip percentage, and tip deviation. Furthermore, time was entered as a predictor and moderator of each predictor-outcome relationship.

In summary, MRCM estimates and tests the differences that occur both within and between groups (individuals across measurement occasions). One can determine whether individuals differ on their mean ego depletion and tip percentage levels. Additionally, one can examine within individual differences in these ratings and determine if level 1 predictors explain these differences. Finally, one can determine if individual level differences explain within individual differences in ego depletion levels and tip percentage. In order to individually test each of these effects, we used a multiple step process explained in the results section below.

In addition to employing MRCM, I tested a moderated three path mediation model in which surface acting (or deep acting) mediated the relationship between mood and ego depletion, and ego depletion mediated the relationship between surface acting (or deep acting) and customer provided outcomes. To test this model, mood was entered as a predictor of surface acting (or deep acting) (stage 1). Then mood was entered as a
predictor of ego depletion controlling for surface acting (or deep acting) (stage 2). Next, 
mood was entered as a predictor of customer satisfaction (or tip percentage or tip 
deviation) controlling for surface acting (or deep acting) and ego depletion (stage 3). 
Furthermore, all three stages were moderated by time. The complexity of this type of 
model often results in confusion and the misapplication of statistical techniques used to 
individually test moderation or mediation (Edwards & Lambert, 2007) As such, I 
followed procedures for testing these types of relationships described by Edwards and 

In order to test this type of model I first tested the moderation effects at all three 
stages. I then calculated simple slopes regressing the outcome on the predictor at high 
(+1 SD), medium (mean), and low (-1 SD) levels of time along with the error terms 
associated with these slopes using the procedure outlined in Cohen, Cohen, Aiken and 
West (2002). Finally, to test for mediation I first used the Sobel test (Sobel, 1982) to 
determine if mediation occurred between stage 1 and stage 2 and between stage 2 and 
stage 3. The indirect effect was calculated by multiplying the effect of stage 1 by stage 2 
at the start and end of the shift for each stage. Thus, a total of four indirect effects and 
their error terms were calculated when the shift was at a) the end at stage 1 and the end at 
stage 2, b) the end at stage 1 and the beginning at stage 2, c) the beginning at stage 1 and 
the end at stage 2, and d) the beginning at stage 1 and the beginning at stage 2. I present 
the results of these tests below.
CHAPTER THREE

RESULTS

Descriptive Statistics and Within-Person Correlations

*Descriptive Statistics*

Descriptive statistics may be found in Table 1. Descriptive statistics presented include the sample size providing data for each variable, variable mean and standard deviation, and the statistics representing the degree of nesting (ICC1), within-person reliability (ICC2), and within-person agreement (R_wgp), (Bliese, 2000).

Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>γ₀₀</th>
<th>ρ²</th>
<th>τ₀₀</th>
<th>ICC₁</th>
<th>ICC₂</th>
<th>R_wgp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Mood</td>
<td>278</td>
<td>5.31</td>
<td>0.44</td>
<td>1.84</td>
<td>0.81</td>
<td>0.96</td>
<td>0.86</td>
</tr>
<tr>
<td>Surface Acting</td>
<td>278</td>
<td>3.26</td>
<td>0.82</td>
<td>1.73</td>
<td>0.68</td>
<td>0.96</td>
<td>0.89</td>
</tr>
<tr>
<td>Deep Acting</td>
<td>278</td>
<td>4.23</td>
<td>0.68</td>
<td>1.57</td>
<td>0.70</td>
<td>0.93</td>
<td>0.79</td>
</tr>
<tr>
<td>Ego Depletion</td>
<td>277</td>
<td>1.72</td>
<td>0.27</td>
<td>0.36</td>
<td>0.57</td>
<td>0.96</td>
<td>0.93</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>187</td>
<td>6.6</td>
<td>0.52</td>
<td>0.06</td>
<td>0.10</td>
<td>0.24</td>
<td>0.82</td>
</tr>
<tr>
<td>Tip Percentage</td>
<td>177</td>
<td>20.36</td>
<td>52.68</td>
<td>NA</td>
<td>NA</td>
<td>0.33</td>
<td>0.91</td>
</tr>
<tr>
<td>Tip Deviation</td>
<td>187</td>
<td>4.85</td>
<td>1.25</td>
<td>NA</td>
<td>NA</td>
<td>0.42</td>
<td>0.77</td>
</tr>
</tbody>
</table>

*Notes.* γ₀₀ = pooled intercept averaged across individuals. ρ² = within-individual variance in dependent variable. τ₀₀ = between-individual variance in dependent variable.

As can be seen in Table 1, each variable except those provided by customers’ exhibit a very high degree of nesting and within-person agreement and reliability. The tip and tip deviation data provided by customers failed to converge and thus ICC₁ values could not be obtained for tip percentage and tip deviation. This indicates no mean
differences between individuals on either variable. Interestingly, high $R_{wgp}$ values were uncovered. Indeed, each $R_{wgp}$ value differs significantly from chance when compared to simulated values specifying a random uniform distribution using a bootleg procedure replicated 1000 times (Cohen, Doveh, & Nuham-Shani, 2009). This indicates that tables generally responded with similar values for each variable within servers. The ICC$_2$ values are lower and indicate that tables of customers cannot be reliably differentiated from each other in terms of satisfaction, tip percentage, and tip deviation. Regardless, moderate ICC$_1$ values indicated multilevel modeling as an appropriate data analytic strategy that was used to test each hypothesis.

**Within-Person Correlations**

While descriptive statistics provided some basic information about how the sample responded to the constructs of interest, these statistics say nothing about the interrelationships among the variables. To get an idea of how the variables are related to one another within-persons, I calculated a within-person correlation matrix (see Table 2) in accordance with procedures outlined by Snijders and Bosker (1999).

While more sophisticated analyses follow, the correlations provide conditional support for a number of hypotheses. Specifically, the table reveals a significant positive relationship between mood and tip percentage supporting hypothesis 1b. A negative relationship between mood and surface acting supported hypothesis 2a, and a negative relationship between mood and ego depletion supported hypothesis 5. There were also positive relationships between surface acting and ego depletion supporting hypothesis 6a and deep acting and customer satisfaction supporting hypothesis H3a. Some
relationships uncovered were in the opposite direction from that proposed in the hypotheses. For example, a negative relationship between tip percentage and surface acting was counter to hypothesis 3d and a negative relationship between tip percentage and ego depletion was opposite of hypothesis 8b.

Table 2.  
*Within-person correlations among mood, emotional labor, time, and customer variables.*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Time</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Mood</td>
<td>-0.06</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Surface Acting</td>
<td>-0.05</td>
<td>-0.32**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Deep Acting</td>
<td>0.04</td>
<td>0.03</td>
<td>-0.13</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Ego Depletion</td>
<td>0.10</td>
<td>-0.58**</td>
<td>0.35**</td>
<td>-0.08</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Cust. Satisfaction</td>
<td>-0.06</td>
<td>0.10</td>
<td>-0.01</td>
<td>0.16*</td>
<td>-0.05</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Tip Percentage</td>
<td>-0.02</td>
<td>0.24**</td>
<td>-0.29**</td>
<td>0.06</td>
<td>-0.18**</td>
<td>0.16**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>8. Tip Deviation</td>
<td>0.02</td>
<td>0.09</td>
<td>0.01</td>
<td>0.05</td>
<td>-0.05</td>
<td>0.45**</td>
<td>0.23**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Nes.** **indicates $p < .01$ and * indicates $p < .05$.

**Multilevel Models**

Two series of MRCM were run using a model building approach. The first series tested the relationships between mood, surface acting, ego depletion, and customer variables over time. In order to build the model, the relationship between mood and surface acting was first tested. Next, the relationship between mood and ego depletion was tested controlling for surface acting. The final models tested the relationships between mood and each customer outcome controlling for surface acting and ego depletion.

The second series tested the relationships between mood, deep acting, ego depletion, and customer variables over time following the same procedure described
above. I ran each series (surface acting vs. deep acting) separately to increase the power to detect the hypothesized relationships. While this approach is less conservative than testing a model with surface acting, deep acting, and their respective interactions with time, it improves the chances of uncovering significant effects without partialling out common variance and reducing degrees of freedom. This was especially important given the model sample size and complexity of the model.

**Surface Acting Path**

*Surface Acting Outcome.* The first model tested included surface acting as an outcome variable and served to test hypothesis 2a. A model with and without a random intercept was tested to determine whether MLM is the appropriate analytic strategy. The model fit the data significantly better when a random intercept term was included, $\Delta \chi^2 (1) = 122.97, p < .001$. Thus, all subsequent models regressing surface acting on predictors included a random intercept. Next, time and mood were individually entered as random effects, but only mood was retained as it significantly improved the model fit, $\Delta \chi^2 (1) = 16.93, p < .01$. In other words, there was significant variation in the relationship between mood and surface acting across individuals, but no variation in the relationship between time and surface acting. Additionally, predictor variables time and mean-centered mood were entered as fixed predictors. Mood was significantly related to surface acting, but time was not (see Table 3 for parameter estimates), supporting hypothesis 2a. I subsequently tested the interaction of time and mood to determine if the relationship between mood and surface acting changed over time. This interaction was not significant.
Ego Depletion Outcome. The second model that was tested included ego depletion as an outcome variable and tested hypotheses 5, 6a, and 7a. This model was tested to show that the total effect on ego depletion is composed of a moderated direct effect of mood by time (H5) and a moderated indirect effect of mood through surface acting (H6a and H7a) at different points in time.

Table 3.
Parameter estimates for time and mood predicting surface acting.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unstand B</th>
<th>Std. Error</th>
<th>df</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>4.60</td>
<td>1.30</td>
<td>22.77</td>
<td>3.53</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Time</td>
<td>-4E-4</td>
<td>6E-4</td>
<td>26.44</td>
<td>-1.00</td>
<td>0.32</td>
</tr>
<tr>
<td>Mood</td>
<td>-0.27</td>
<td>0.08</td>
<td>198.25</td>
<td>-3.25</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

I first specified a model with and without a random intercept and found the model fit the data better when a random intercept term was included, $\Delta \chi^2 (1) = 59.84, p < .001$. Next, time and mean-centered mood were specified as random slopes, and both mood, $\Delta \chi^2 (1) = 35.96, p < .001$ and time, $\Delta \chi^2 (1) = 47.56, p < .01$ resulted in a significantly better model fit when a random slope term was included. Fixed effects of time, mood, and the interaction of time and mood were entered. A significant interaction of time and mood was uncovered (see Table 4a for parameter estimates).

Examining the nature of the interaction revealed the slopes at shift start ($B = -.35, S.E. = .09$), mid shift ($B = -.46, S.E. = .07$) and the end of the shift ($B = -.57, S.E. = .09$) were all significant, $z = -4.16, p < .01$, $z = -6.83, p < .01$ and $z = -6.70, p < .01$, respectively.
respectively. These slopes are depicted in Figure 2 and show that a more positive mood
evenly at the end and mid shift was associated with lower reports of ego depletion.
Conversely, a negative mood at the end of the shift is associated with significantly higher
levels of ego depletion relative to the beginning of the shift.

After examining the relationship between time, mood, and ego depletion, I next entered fixed effects of surface acting and the interaction of surface acting and time in addition to the parameters described above. This was done to test hypotheses 6a and 7a.
Table 4. 
Parameter estimates for time, mood, surface acting and the interaction of time and mood and surface acting and time predicting ego depletion.

Part A. Fixed effect estimates for time, mood and interaction of time and mood predicting ego depletion.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unstand. B</th>
<th>Std. Error</th>
<th>df</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.80</td>
<td>0.12</td>
<td>38.45</td>
<td>15.14</td>
<td>&lt;0.00</td>
</tr>
<tr>
<td>Time</td>
<td>3E-4</td>
<td>4E-4</td>
<td>20.04</td>
<td>0.78</td>
<td>0.45</td>
</tr>
<tr>
<td>Mood</td>
<td>-0.46</td>
<td>0.06</td>
<td>30.96</td>
<td>-7.04</td>
<td>&lt;0.00</td>
</tr>
<tr>
<td>Time*Mood</td>
<td>-4E-4</td>
<td>2E-4</td>
<td>77.34</td>
<td>-2.08</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Part B. Fixed effect estimates for time, mood, surface acting, and interaction of time by mood and time by surface acting to predict ego depletion.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unstand. B</th>
<th>Std. Error</th>
<th>df</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.67</td>
<td>0.09</td>
<td>38.47</td>
<td>17.90</td>
<td>&lt;0.00</td>
</tr>
<tr>
<td>Time</td>
<td>2E-4</td>
<td>3E-4</td>
<td>16.82</td>
<td>0.70</td>
<td>0.49</td>
</tr>
<tr>
<td>Mood</td>
<td>-0.35</td>
<td>0.04</td>
<td>167.80</td>
<td>-8.38</td>
<td>&lt;0.00</td>
</tr>
<tr>
<td>Time*Mood</td>
<td>-1E-5</td>
<td>1E-4</td>
<td>111.43</td>
<td>-0.08</td>
<td>0.93</td>
</tr>
<tr>
<td>Surface Acting</td>
<td>0.11</td>
<td>0.03</td>
<td>179.86</td>
<td>3.05</td>
<td>&lt;0.00</td>
</tr>
<tr>
<td>Time*Surface Acting</td>
<td>3E-4</td>
<td>1E-4</td>
<td>137.52</td>
<td>2.09</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Part C. Indirect effects of mood on ego depletion acting through surface acting at the beginning and end of shift.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Indirect Effect</th>
<th>Std. Error</th>
<th>z-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning of Shift: Mood and Surface Acting</td>
<td>0.01</td>
<td>0.017</td>
<td>0.58</td>
<td>0.56</td>
</tr>
<tr>
<td>Beginning of Shift: Mood, End of Shift: Surface Acting</td>
<td>-0.05</td>
<td>0.041</td>
<td>-1.27</td>
<td>0.2</td>
</tr>
<tr>
<td>End of Shift: Mood, Beginning of Shift: Surface Acting</td>
<td>-0.04</td>
<td>0.058</td>
<td>-0.62</td>
<td>0.53</td>
</tr>
</tbody>
</table>
This model resulted in a significant interaction of surface acting and time, and it also reduced the interaction of time and mood to nonsignificance indicating the interaction of time and surface acting was associated with the relationship between the interaction of time and mood and ego depletion perhaps indicating mediation (see Table 4b).

In order to test the mediating effect of the interaction of time and surface acting, I first calculated simple slopes for this interaction. The simple slope between surface acting and ego depletion at the beginning of the shift ($B = -.049, S.E. = .07$) was not significant, but the slopes at mid shift ($B = .107, S.E. = .04$) and the end of the shift ($B = .263, S.E. = .09$) were both significant, $z = 3.05, p < .01$ and $z = 3.04, p < .01$, respectively. A plot of the slopes may be seen in Figure 3 which shows increased levels

---

**Figure 2.** Plot showing simple slopes of mood predicting ego depletion at different points in the shift

<table>
<thead>
<tr>
<th>End of Shift: Mood and Surface Acting</th>
<th>-0.19</th>
<th>0.07</th>
<th>-2.59</th>
<th>0.01</th>
</tr>
</thead>
</table>

![Graph showing ego depletion at different points in the shift](image-url)
of ego depletion are associated with higher surface acting at mid shift and at the end of the shift.

The next step was to determine the mediating effect of surface acting in the mood-ego depletion relationship at different points in time. In order to do this, I calculated four indirect effects and the associated error terms using the Sobel test. The first effect was when both mood and surface acting were assessed at the beginning of the shift. The second effect was when mood was assessed at the beginning of the shift and surface acting was assessed at the end of the shift. The third effect was when mood was assessed at the end of the shift and surface acting was assessed at the beginning of the shift. The final effect was when both mood and surface acting were measured at the end of the shift.

Figure 3. Plot of simple slopes showing relationship between surface acting and ego depletion at different points in the shift
Moderated mediation tests revealed a significant indirect effect of mood on ego depletion through surface acting when both variables were assessed at the end of the shift (see Table 4c). These results indicate that a decreased mood at the end of the shift was associated with higher levels of surface acting which was associated with higher reports of ego depletion.

After determining the relationship between mood and ego depletion is mediated by surface acting at the end of the shift, the next step was to test the full three path mediation model with each of the three customer provided variables. This model was designed to test hypothesis 11a.

Customer Satisfaction Outcome. Customer ratings of satisfaction were entered with and without a random intercept term. Including a random intercept did not significantly improve the model, \( \Delta \chi^2 (1) = 1.39, p > .05 \), and examination of the parameter estimates revealed no significant intercept variance. However, due to the flexibility MRCM offers, I continued using that analytic technique including a random intercept while testing subsequent models.

The first model included mood and time as well as the interaction of mood and time, which tested hypothesis 1. This model resulted in a significant interaction of mood and time in predicting customer satisfaction ratings (see Table 5 for parameter estimates).
Table 5.
Parameter estimates for mood, time and the interaction of mood and time predicting customer satisfaction.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unstand. B</th>
<th>Std. Error</th>
<th>df</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.20</td>
<td>0.03</td>
<td>45.19</td>
<td>7.67</td>
<td>0.00</td>
</tr>
<tr>
<td>Time</td>
<td>-2E-4</td>
<td>1E-4</td>
<td>96.79</td>
<td>-1.51</td>
<td>0.13</td>
</tr>
<tr>
<td>Mood</td>
<td>-0.04</td>
<td>0.02</td>
<td>77.88</td>
<td>-2.02</td>
<td>0.05</td>
</tr>
<tr>
<td>Time*Mood</td>
<td>3E-4</td>
<td>1E-4</td>
<td>170.60</td>
<td>2.70</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Decomposing the interaction revealed that the simple slope of customer satisfaction on mood was significant at both the start ($B = .099$, $S.E. = .03$, $z = 3.05$, $p < .01$) and mid shift ($B = .037$, $S.E. = .02$, $z = 2.00$, $p < .05$), but not at the end of the shift, ($B = -.025$, $S.E. = .03$, $z = .95$, $p > .05$). A plot of these slopes may be found in Figure 4, and show a trend in which the relationship is stronger at the beginning of the shift instead of the end of the shift as in the previous models. This finding decreases the likelihood that surface acting or ego depletion will mediate the relationship between mood and customer satisfaction.
Figure 4. Plot showing simple slopes of customer satisfaction on mood at different points in the shift.

After uncovering the interaction of mood and time to predict satisfaction ratings, I entered surface acting and the interaction of surface acting and time as predictors to determine if this acting strategy mediates the relationship between mood and customer satisfaction testing hypothesis 4. Neither surface acting \( (p > .05) \), nor the interaction of time and surface acting \( (p > .05) \) were significant when tested hierarchically. As such, surface acting was removed from the subsequent model.

The final model added ego depletion and the interaction of ego depletion as fixed predictors to the existing mood and time model. This model also failed to yield significance for ego depletion or the interaction of time and ego depletion. Thus, neither surface acting nor ego depletion mediated the relationship between mood and customer satisfaction over time.

*Customer Tip Percentage Outcome.* The same process described above for testing the mediating effects of surface acting and ego depletion on the mood-customer
satisfaction relationship over time was also modeled with tip percentage as an outcome. The first step included entering tip percentage with and without a random intercept term. The model with the random intercept term failed to converge indicating no mean differences in tip percentage across servers. As such, subsequent models will be tested without a random intercept.

The first model included mood, time, and the interaction of mood and time to predict tip percentage which tested hypothesis 1b. This model resulted in a marginally significant interaction between mood and time to predict tip percentage (See Table 6a for parameter estimates).

I calculated simple slopes using the MLM regression coefficients of tip percentage and mood at three different points during the shift. Tests of the slopes revealed no relationship between mood and tip percentage at shift start and mid shift, but a positive relationship at shift end, \( B = 1.45, S.E. = .55, z = 2.65, p < .05 \). A plot of these slopes may be seen in Figure 5.

After decomposing the interaction of mood and time, I added surface acting and the interaction of time and surface acting to the model to test hypothesis 4b. Neither the main effect, nor interaction significantly predicted tip percentage. As such, surface acting was removed from the subsequent model.
Table 6.
*Parameter estimates for time, mood, ego depletion, and the interaction of mood and ego depletion with time in predicting tip percentage*

Part A. *Parameter estimates showing marginal interaction of time and mood to predict tip percentage.*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unstand. B</th>
<th>Std. Error</th>
<th>df</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>20.56</td>
<td>0.53</td>
<td>178.00</td>
<td>39.14</td>
<td>0.00</td>
</tr>
<tr>
<td>Time</td>
<td>-0.01</td>
<td>0.00</td>
<td>178.00</td>
<td>-2.47</td>
<td>0.01</td>
</tr>
<tr>
<td>Mood</td>
<td>0.59</td>
<td>0.37</td>
<td>178.00</td>
<td>1.59</td>
<td>0.11</td>
</tr>
<tr>
<td>Time*Mood</td>
<td>3E-3</td>
<td>2E-3</td>
<td>178.00</td>
<td>1.69</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Part B. *Parameter estimates showing interaction of time and ego depletion to predict tip percentage*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unstand. B</th>
<th>Std. Error</th>
<th>df</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>20.08</td>
<td>0.55</td>
<td>175.00</td>
<td>36.34</td>
<td>0.00</td>
</tr>
<tr>
<td>Time</td>
<td>-2E-3</td>
<td>3E-3</td>
<td>175.00</td>
<td>-0.56</td>
<td>0.57</td>
</tr>
<tr>
<td>Mood</td>
<td>0.32</td>
<td>0.42</td>
<td>175.00</td>
<td>0.77</td>
<td>0.44</td>
</tr>
<tr>
<td>Time*Mood</td>
<td>0.01</td>
<td>0.00</td>
<td>175.00</td>
<td>3.10</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Ego Depletion</td>
<td>-1.17</td>
<td>0.85</td>
<td>175.00</td>
<td>-1.37</td>
<td>0.17</td>
</tr>
<tr>
<td>Time*Ego Depletion</td>
<td>0.02</td>
<td>0.01</td>
<td>175.00</td>
<td>2.83</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Part C. *Indirect effects of mood on tip percentage acting through ego depletion at the beginning and end of shift.*

<table>
<thead>
<tr>
<th>Parameter Description</th>
<th>Indirect Effect</th>
<th>Std. Error</th>
<th>z-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning of Shift: Mood and Ego Depletion</td>
<td>1.36</td>
<td>3.57</td>
<td>0.38</td>
<td>0.7</td>
</tr>
<tr>
<td>Beginning of Shift: Mood, End of Shift: Ego Depletion</td>
<td>-0.73</td>
<td>1.92</td>
<td>-0.38</td>
<td>0.7</td>
</tr>
<tr>
<td>End of Shift: Mood, Beginning of Shift: Ego Depletion</td>
<td>-7.32</td>
<td>3.98</td>
<td>-1.84</td>
<td>0.07</td>
</tr>
<tr>
<td>End of Shift: Mood and Ego Depletion</td>
<td>3.93</td>
<td>2.2</td>
<td>1.79</td>
<td>0.07</td>
</tr>
</tbody>
</table>
Figure 5. Simple slopes for mood predicting tip percentage at different points in the shift.

Since surface acting failed to predict tip percentage, I included ego depletion and the interaction of time and ego depletion to the initial model with mood, time, and their interaction. This model resulted in a significant interaction of time and ego depletion above the already significant interaction of time and mood (see Table 6b for parameter estimates).

Examining the simple slopes revealed ego depletion significantly predicted tip percentage at the start of the shift \((B = -5.05, S.E. = 2.00, z = 2.52, p < .05)\) and at the end of the shift \((B = 2.71, S.E. = 1.13, z = 2.39, p < .05)\). The simple slope at mid shift, however, was not significant, \((B = -1.17, S.E. = .85, z = -1.38, p > .05)\). These slopes are plotted in Figure 6 and indicate high levels of ego depletion result in lower tip percentages at the start of the shift, and interestingly, higher ego depletion actually results in higher tip percentages at the end of the evening.
Since the interaction between ego depletion and time was significant, and it reduced the regression coefficient for the interaction of mood and time, I again calculated four indirect effects and tested those using the Sobel test. Parameter estimates for these effects can be found in Table 6c. Two of the indirect effects were approaching significance. At the end of the shift a more positive mood was associated with higher tip percentages through increased ego depletion. Furthermore, an increased mood was associated with higher tip percentages at the end of the shift when ego depletion was lower at the beginning of the shift.

*Customer Tip Deviation Outcome.* The final outcome tested using the same predictors described above was the customer report of the degree to which the tip they left for the server differed from the customer’s normal tipping behavior testing hypothesis 11c. Like tip percentage, this variable failed to converge when a random intercept term was specified. As such, all subsequent models included only the fixed intercept term.
Using the same process for each of the outcome variables already described, I entered mood, time, and the interaction of mood and time as fixed predictors to test hypothesis 1c. None of these variables significantly predicted tip deviation variance. Thus, mood was excluded from all subsequent models.

Next, surface acting, time, and the interaction of those two variables were entered as predictors to test hypothesis 3c. This model resulted in a significant interaction (see Table 7 for parameter estimates). The nature of the interaction was such that the slope of surface acting was significant at the beginning of the shift \( (B = -0.21, S.E. = 0.10, z = -2.06, p < .05) \), but the simple slopes at mid shift and the end of the shift were not significant.

Figure 7 shows a plot of the simple slopes and indicates higher levels of surface acting resulted in lower-than-normal tips at the beginning of the shift. As the shift progressed, higher levels of surface acting improve the chances the server will secure a higher-than-normal tip, but this slope is not significantly different from zero.

Table 7.
Parameter estimates for time, surface acting, and the interaction of time and surface acting predicting tip deviation.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unstand. B</th>
<th>Std. Error</th>
<th>df</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>4.91</td>
<td>0.08</td>
<td>190.00</td>
<td>57.87</td>
<td>0.00</td>
</tr>
<tr>
<td>Time</td>
<td>6E-4</td>
<td>4E-4</td>
<td>190.00</td>
<td>1.31</td>
<td>0.19</td>
</tr>
<tr>
<td>Surface Acting</td>
<td>-0.05</td>
<td>0.06</td>
<td>190.00</td>
<td>-0.96</td>
<td>0.34</td>
</tr>
<tr>
<td>Time*Surface Acting</td>
<td>7E-4</td>
<td>3E-4</td>
<td>190.00</td>
<td>2.21</td>
<td>0.03</td>
</tr>
</tbody>
</table>
The next step added ego depletion as a fixed effect as well as the interaction of time and ego depletion to test hypotheses 8c and 9c. Neither of these terms improved the fit of the model or significantly predicted residual variance.

**Deep Acting Path**

*Deep Acting Outcome.* The second series of models were tested in the same manner as the first series but included deep acting initially as an outcome variable, and then as a predictor variable in the meditational tests. Like the first surface acting model, including a random intercept term significantly improved the model fit, $\Delta \chi^2 (1) = 114.57$, $p < .001$. All subsequent models using deep acting as an outcome included a random intercept term.
Predictors including mood, time, and the interaction of mood and time were first entered as fixed effects to test hypothesis 2b. Results revealed a significant interaction of mood and time to predict deep acting (see Table 7 for parameter estimates).

Table 8.
*Parameter estimates showing main effects and interaction of mood and time predicting deep acting.*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unstand. B</th>
<th>Std. Error</th>
<th>df</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>4.44</td>
<td>0.19</td>
<td>45.87</td>
<td>23.13</td>
<td>0.00</td>
</tr>
<tr>
<td>Time</td>
<td>-7E-4</td>
<td>5E-4</td>
<td>178.38</td>
<td>-0.76</td>
<td>0.45</td>
</tr>
<tr>
<td>Mood</td>
<td>-1E-3</td>
<td>0.08</td>
<td>186.52</td>
<td>-0.02</td>
<td>0.98</td>
</tr>
<tr>
<td>Time*Mood</td>
<td>-8E-4</td>
<td>3E-4</td>
<td>185.82</td>
<td>-2.51</td>
<td>0.01</td>
</tr>
</tbody>
</table>

In order to test the nature of the interaction, simple slopes were calculated at the beginning, middle, and end of the shift. The following values indicate the relationship between mood and deep acting at those three time points. The slope of the line for mood predicting deep acting at the beginning of the shift \((B = -0.30, S.E. = 0.15, z = -1.98, p < 0.05)\) and at the end of the shift \((B = 0.30, S.E. = 0.14, z = 2.12, p < 0.05)\) were both significant, while the slope of the line at mid shift \((B = -0.02, S.E. = 0.08, z = -0.02, p > 0.05)\) was not significant. A plot of the interaction can be seen in Figure 8. Tests of these simple slopes indicated a negative mood at the start of the shift was associated with higher levels of deep acting. However, by the end of the shift the relationship had reversed. A more positive mood was associated with higher levels of deep acting. This finding had implications for how subsequent models were tested. Each subsequent model was first specified in the manner required to test the stated hypothesis. Namely, mood predicted deep acting which predicted ego depletion which then predicted customer rated
outcomes. However, given that higher levels of deep acting are associated with a more positive mood at the end of the shift, an alternative model was specified and tested such that deep acting predicted mood which predicted ego depletion which then predicted customer rated outcomes. The alternative model was specified because of empirical evidence suggesting stronger effects when deep acting served as a predictor of mood at different points in time. This model was contrary to the hypothesized model, but makes sense in light of the goal of deep acting which is to effectively change one’s mood.
Figure 8. Graph showing simple slopes between mood and deep acting at different times during the shift.

Alternative Model Mood Outcome. The first alternative model specified mood as the outcome and deep acting, time, and the interaction of deep acting and time as predictors. For this model, a random intercept term significantly improved the fit to the data, \( \Delta \chi^2 (1) = 172.46, p < .001 \). Entering deep acting, time, and their interaction yielded a significant interaction (see Table 8 for parameter estimates).

Table 9.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unstand.</th>
<th>Std.</th>
<th>df</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>5.25</td>
<td>0.20</td>
<td>46.29</td>
<td>26.89</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Time</td>
<td>-8E-4</td>
<td>5E-4</td>
<td>194.74</td>
<td>-1.70</td>
<td>0.09</td>
</tr>
<tr>
<td>Deep Acting</td>
<td>0.03</td>
<td>0.06</td>
<td>191.08</td>
<td>0.46</td>
<td>0.65</td>
</tr>
<tr>
<td>Time*Deep Acting</td>
<td>6E-4</td>
<td>2E-4</td>
<td>191.03</td>
<td>2.91</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>
Decomposing the interaction in the alternative model revealed similar findings to the original model. The simple slope of mood on deep acting at the beginning ($B = -0.20$, $S.E. = 0.10$, $z = -2.10$, $p < 0.05$) and at the end of the shift ($B = 0.25$, $S.E. = 0.096$, $z = 2.62$, $p < 0.05$) were both significant, but the slope at mid shift ($B = 0.03$, $S.E. = 0.06$, $z = 0.44$, $p > 0.05$) was not significant. See Figure 9 for a graph of the simple slopes.

_Ego Depletion Outcome._ The next step in testing the original model was to test if deep acting mediated the relationship between mood and ego depletion over time. The first stage of this step was identical to the model described above when testing the surface acting path. From above, it was determined that time and mood interacted to predict ego depletion (see Table 4a and Figure 2).

*Figure 9.* Simple slopes from alternative model showing relationship between deep acting and mood at different points in time.

The second stage of this model tested whether deep acting interacted with a nonlinear effect of time such that higher levels of deep acting resulted in a steep increase.
in ego depletion initially, but then leveled off over time. To test this interaction deep acting, a natural log transformation of time, and the interaction of those two variables were entered controlling for mood, time, and the interaction of mood and time. The natural log transformation of time was created to model the decreasing relationship deep acting was hypothesized to have with ego depletion over time. None of the new variables significantly predicted ego depletion.

*Alternative Model Ego Depletion Outcome.* I next tested the alternative model which reversed the order with which mood and deep acting were entered. As such, deep acting, natural log transformation of time, and their interaction was entered first. This model resulted in a marginally significant interaction of deep acting and natural log transformation of time (see Table 9a for parameter estimates).
Table 10. Parameter estimates for alternative model of deep acting, natural log transformation of time, time and mood and their interaction predicting ego depletion.

Part A. Parameter estimates of deep acting and natural log transformation of time predicting ego depletion

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unstand. B</th>
<th>Std. Error</th>
<th>df</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.71</td>
<td>0.10</td>
<td>32.10</td>
<td>16.65</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Time</td>
<td>1E-3</td>
<td>0.00</td>
<td>11.62</td>
<td>0.32</td>
<td>0.75</td>
</tr>
<tr>
<td>Deep Acting</td>
<td>-0.02</td>
<td>0.04</td>
<td>176.59</td>
<td>-0.55</td>
<td>0.59</td>
</tr>
<tr>
<td>ln(Time)</td>
<td>-0.98</td>
<td>6.07</td>
<td>8.09</td>
<td>-0.16</td>
<td>0.88</td>
</tr>
<tr>
<td>ln(Time)*Deep Acting</td>
<td>-0.56</td>
<td>0.32</td>
<td>38.81</td>
<td>-1.75</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Part B. Parameter estimates for alternative model testing relationship between deep acting, natural log transformation of time, mood and time, and ego depletion.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unstand. B</th>
<th>Std. Error</th>
<th>df</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.82</td>
<td>0.12</td>
<td>49.72</td>
<td>14.70</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Time</td>
<td>-1E-3</td>
<td>2E-3</td>
<td>31.13</td>
<td>-0.39</td>
<td>0.70</td>
</tr>
<tr>
<td>Deep Acting</td>
<td>0.01</td>
<td>0.03</td>
<td>96.73</td>
<td>0.20</td>
<td>0.84</td>
</tr>
<tr>
<td>ln(Time)</td>
<td>2.54</td>
<td>4.84</td>
<td>27.72</td>
<td>0.53</td>
<td>0.60</td>
</tr>
<tr>
<td>Deep Acting*ln(Time)</td>
<td>2E-3</td>
<td>0.22</td>
<td>142.42</td>
<td>0.01</td>
<td>0.99</td>
</tr>
<tr>
<td>Mood</td>
<td>-0.46</td>
<td>0.07</td>
<td>35.96</td>
<td>-6.77</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Time*Mood</td>
<td>-5E-4</td>
<td>2E-4</td>
<td>85.41</td>
<td>-2.11</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Part C. Tests of moderated mediation in which mood mediated the relationship between deep acting and ego depletion at different points in time.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Indirect Effect</th>
<th>Std. Error</th>
<th>z-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning of Shift: Deep Acting and Mood</td>
<td>0.08</td>
<td>0.04</td>
<td>1.97</td>
<td>0.05</td>
</tr>
<tr>
<td>Beginning of Shift: Deep Acting, End of Shift: Mood</td>
<td>0.096</td>
<td>0.048</td>
<td>1.99</td>
<td>0.05</td>
</tr>
<tr>
<td>End of Shift: Deep Acting, Beginning of Shift: Mood</td>
<td>-0.11</td>
<td>0.046</td>
<td>-2.4</td>
<td>0.02</td>
</tr>
<tr>
<td>End of Shift: Deep Acting and Mood</td>
<td>-0.12</td>
<td>0.049</td>
<td>-2.43</td>
<td>0.01</td>
</tr>
</tbody>
</table>
A test of the simple slopes at the beginning ($B = .13$, $S.E. = .09$, $z = 1.34$, $p > .05$) and middle ($B = -.02$, $S.E. = .04$, $z = -.54$, $p > .05$) of the shift were not significant. The simple slope at the end of the shift ($B = -.18$, $S.E. = .09$, $z = -1.81$, $p = .07$) was approaching significance. A plot of the simple slopes (Figure 10) revealed high levels of deep acting initially led to increased ego depletion, but at the end of the shift, high levels of deep acting was actually associated with decreased ego depletion.

![Figure 10. Simple slopes for alternative model showing relationship between deep acting and ego depletion at different points during the shift.](image)

The second stage of this alternative model tested whether mood, time, and their interaction mediated the relationship between the interaction of deep acting and natural log transformed time and ego depletion. This model resulted in a significant interaction of mood and time predicting ego depletion, and the previous marginal interaction of deep acting and natural log transformation of time is now no longer significant (see Table 9b for parameter estimates).
Testing the simple slopes from this second stage of the alternative model revealed the relationship between mood and ego depletion was significant at all three points during the shift. The slope at the beginning of the shift was, $B = -\, .44, S.E. = .07, z = -6.32, p < .01$, at mid shift it was, $B = -\, .46, S.E. = .07, z = -6.77, p < .01$, and at the end of the shift the slope was, $B = -\, .48, S.E. = .07, z = -7.04, p < .01$. A graph of these slopes may be found in Figure 11.

The next step was to determine the mediating effect of mood in the deep acting-ego depletion relationship at different points in time. In order to do this, I calculated four indirect effects and the associated error terms using the Sobel test. These effects were when mood acted as a mediator at the beginning and end of the shift between the relationship of deep acting at the beginning and end of the shift and ego depletion. Moderated mediation tests revealed a significant indirect effect of deep acting on ego depletion through mood at each stage (see Table 9c for parameter estimates). At the beginning of the shift higher levels of deep acting led to greater ego depletion because the server was in a negative mood. At the end of the shift, higher levels of deep acting were associated with a more positive mood which was associated with less ego depletion.
Figure 11. Simple slopes from alternative model showing relationship between mood and ego depletion at different times during the shift.

*Customer Satisfaction Outcome.* The first customer outcome tested was customer satisfaction. The first step in testing this model was to determine the relationship between mood, time and their interaction and customer satisfaction to test hypothesis 1a. This model was previously tested under the surface acting section and I refer the reader to that test in Table 5.

The next step was to test whether deep acting mediated the relationship between mood and customer satisfaction over time (hypotheses 3d and 4d). Thus, deep acting, natural log transformed time, and their interaction were entered controlling for mood, time, and their interaction. The interaction of mood and time remained significant and no fixed effects were uncovered for deep acting, natural log transformed time or their interaction indicating no main effect for deep acting or any mediating effect.

*Alternative Model Customer Satisfaction Outcome.* The alternative model indicated deep acting would lead to higher levels of customer satisfaction through mood
over time. This model was tested by entering deep acting, natural log transformed time
and their interaction into the first step. None of the three fixed effects significantly
predicted customer satisfaction. As such, no further models were tested.

*Tip Percentage Outcome.* Like customer satisfaction described above, the
relationship between mood, time, and their interaction was previously tested when
predicting tip percentage (see Table 6). Deep acting, natural log transformed time, and
their interaction failed to predict tip percentage outcome above that of mood. Thus, no
additional models involving deep acting were tested for this outcome.

*Alternative Model Tip Percentage Outcome.* Testing the alternative model using
deep acting, natural log transformed time and their interaction first also failed to predict
tip percentage. Thus, no additional models were tested.

*Tip Deviation Outcome.* Again, the first step in testing a model with tip deviation
as the outcome was previously examined and showed that mood, time, and their
interaction did not predict tip deviation. As such, I moved on to testing deep acting,
natural log transformed time, and their interaction. These variables also failed to predict
tip deviation which precluded me from even testing the alternative model.
CHAPTER FOUR

DISCUSSION

The present dissertation was designed to test the idea that employees can regulate the display of their emotions and this is in turn related to customers providing higher ratings of satisfaction and higher-than-normal tips, and that this process is especially true later in the employees’ shift. In more technical terms, I sought to test a moderated three-path mediation model in which employee mood is related to customer-provided outcomes through emotional labor and subsequent ego depletion differently over time. This model was based on combining two popular theories described in the emotions and emotion regulation literature: Emotional Contagion Theory and Control Theory, respectively.

In Emotional Contagion Theory, Hatfield et al. (1994) argued that people can catch others’ moods and emotions simply through mimicking their emotional displays. Diefendorff and Gosserand (2003) used Control Theory to describe how service employees use emotion regulation strategies to generate positive emotions to display to customers. They further argued that this process is dynamic, changing from moment to moment, and that researchers need to use experience sampling designs to capture how these relationships unfold over time.

The present dissertation answers this call by examining relationships between mood, resource expenditure through emotion regulation, and customer outcomes over time. While the full moderated three-path mediation was not significant, substantial portions of the model were and warrant further explanation. As such, the remainder of this dissertation discusses the results of this study. I provide explanations for why certain
relationships were uncovered and others were not. I begin the discussion by focusing on each acting strategy (surface vs. deep) separately because each strategy empirically functioned differently within the model. I then present practical implications as a result of the findings and discuss limitations of the study, as well as present directions for future research.

Surface Acting Path

Surface Acting Outcome

Recall that surface acting is a response focused emotion regulation strategy (Grandey, 2000). That is, individuals engaging in surface acting do so when they detect a discrepancy between their felt mood or emotion and the one needed to be displayed (Gross, 1998). Thus, one would expect, as I did, that employees experiencing a negative mood would be more likely to report engaging in surface acting. Indeed, the data indicated that a negative relationship between mood and surface acting was significant in the present sample. This result corroborates the same finding by Totterdell and Holman (2003). These authors also uncovered a negative relationship between surface acting and mood using a similar experience sampling approach.

In addition to hypothesizing a main effect, I also argued that the relationship between mood and surface acting would become stronger as the shift progressed. I posited that some individuals would experience a more negative mood as the evening progressed because of declining energy levels. I argued that these individuals would have to engage in even more surface acting in order to meet the display rule, thus
strengthening the relationship between mood and surface acting over time. The data revealed no such effect.

The argument presented above stated that a decline in mood for some people would be a function of a single component of mood, namely energy. Unfortunately, this same component likely also serves as the “fuel” source for surface acting (Goldberg & Grandey, 2007). Individuals need energy to engage in surface acting. Thus, as energy levels decline, employees no longer have the means to engage in surface acting. The declination in energy creates a more negative mood and a commensurate decline in one’s ability to surface act. This possibly creates a situation in which the relationship between mood and surface acting remains consistent across time instead of strengthening over time as was hypothesized.

Ego Depletion Outcome

After examining the relationship between mood and surface acting, I next tested the relationship between mood and ego depletion over time. I specifically argued that mood would be directly negatively related to ego depletion and that mood would be indirectly related to ego depletion through surface acting. Furthermore, I argued that these effects would be stronger over time because individuals would have to expend more energy later in the evening as their mood declined. This would result in higher levels of ego depletion.

I tested the model in two stages. First, I examined the interactive effect of mood and time on ego depletion. This model revealed that the relationship between mood and ego depletion varied as a function of time. While the relationship between mood and ego
depletion was significant at the beginning of the shift, this same relationship was considerably stronger at the end of the shift. Employees reporting a more negative mood were also likely to report higher levels of ego depletion and this was especially true later in the shift.

This finding is not surprising, albeit counter to the hypothesis, given the energy component of both ego depletion (Baumeister, 2002) and mood (Wilhelm & Schoebi, 2007) and the fact that energy levels have been shown to decline over the course of an evening through decreases in arousal (Clark, Watson, & Leeka, 1989; Thayer, Takahashi, & Pauli, 1988; Watson, 2000).

After identifying the interactive effect of mood and time on ego depletion, I next tested the moderating effect of time on the relationship between surface acting and ego depletion. I did this while controlling for mood, time, and their interaction. This model also resulted in a significant interaction such that the relationship between surface acting and ego depletion became stronger as the evening wore on.

The model described above also allowed me to test the mediating effect of surface acting on the relationship between mood and ego depletion. Because the stronger relationship between mood and ego depletion over time was reduced to zero when the interaction of surface acting and time were entered, the data indicated significant mediation may be present.

Indeed, results revealed that individuals who experienced a more negative mood later in the evening also experienced increased levels of ego depletion, and this possibly happened because these employees engaged in higher levels of surface acting.
Although never tested in this manner before, researchers have previously found that a more negative mood is related to increased levels of surface acting (Totterdell & Holman, 2003). Furthermore, studies have shown that increased levels of surface acting are related to higher reports of ego depletion (Goldberg & Grandey, 2008) and higher levels of emotional exhaustion (Bono & Vey, 2005). Thus, combining these effects into a single model was theoretically warranted and empirically supported.

Customer Satisfaction Outcome

Many organizations have as a stated goal the desire to please and satisfy customers. As such, customer satisfaction was an important outcome variable that was assessed in the present dissertation. The ultimate goal of this dissertation was to test a model in which self-reported ratings of employee mood would act through surface acting and ego depletion to predict customers’ ratings’ of satisfaction and that these relationships would become stronger over time. This model was tested hierarchically such that mood, time, and the interaction of mood and time were tested first. This was followed by entering surface acting and the interaction of surface acting and time. Finally, ego depletion and the interaction of ego depletion and time were entered. In each case, I sought to determine whether the addition of a new variable reduced the relationship between the previously added variable and customer satisfaction.

Beginning with mood, I uncovered a significant interaction between mood and time such that the relationship between mood and customer satisfaction was initially positive, supporting the emotional contagion theory, and steadily declined over the course of the evening drawing into question the theory. Put another way, a positive mood was
associated with higher ratings of satisfaction at the beginning and middle of the shift, but at the end of the shift higher ratings of mood were not associated with increased ratings of satisfaction. This finding is counter to my hypothesis, but makes sense in light of the previous discussion on the energetic arousal component of mood.

Previous researchers have shown that positive moods follow an inverse-U shaped trajectory over the course of a day (Clark, Watson, & Leeka, 1989; Thayer, Takahashi, & Pauli, 1988; Watson, 2000). Individuals generally report low positive moods when they first wake in the morning followed by a steady increase in positive moods until sometime in the evening. Positive moods then steadily decline until people fall asleep.

This trajectory of mood states could play a role in how employees portray their mood to customers. Perhaps employees are able to initially portray a positive mood to customers, but as the evening progresses and employees’ positive mood declines this decline is apparent to customers. Customers may then respond with slightly lower ratings of satisfaction.

Alternatively, customers could experience the same decline in positive moods over the course of an evening and misattribute that decline to the mood of the server. The customer then would be more inclined to rate satisfaction with service lower later in the evening. Indeed, some research indicates that time of day differences in mood have a significant impact on ratings of customer satisfaction (Hornik & Miniero, 2009). Thus, it is impossible to determine whether declinations in employee mood resulted in a decline in customer mood and rated satisfaction or whether mood in both employees and
customers was affected by the same negative shift as a function of diurnal changes in energetic arousal.

Turning next to the role surface acting plays in ratings of customer satisfaction, I failed to find the hypothesized positive relationship between surface acting and customer satisfaction. Nor did I find the hypothesized interaction of surface acting and time to predict customer satisfaction.

The lack of a significant relationship between surface acting and customer satisfaction implies that surface acting is an ineffective emotion regulation strategy in terms of creating satisfied customers. Potentially, this null finding is a function of customers’ perceiving inauthentic displays by employees, or even the leakage of the truly felt mood by employees even though employees were investing effort into displaying positive moods. Henig-Thurau et al. (2006) also failed to find a relationship between surface acting and customer satisfaction. These authors argued that surface actors often leak the mood or emotion they actually feel, resulting in customers being less than perfectly satisfied.

While surface acting was not significantly related to customer satisfaction, some employees still engaged in high levels of surface acting which were associated with increased levels of ego depletion. The next step in testing the hypothesized model included ego depletion and the interaction of ego depletion and time as a predictor of customer satisfaction. This was done while controlling for mood, time, and the interaction of mood and time. This model also failed to reach significance and indicated that ego depletion does not mediate the relationship between mood and customer
satisfaction. I was unable to uncover any study that had previously examined the relationship between ego depletion and customer outcomes. As previously noted, however, one study did reveal a significant positive relationship between emotional exhaustion and customer satisfaction (Dormann & Kaiser, 2002). Yet, results from the present dissertation failed to support these findings, indicating more research is needed to understand this relationship.

*Tip Percentage Outcome*

In addition to examining customer satisfaction, which is a subjective outcome influenced by both cognitive and affective processes, I also examined tip percentage, which is a more objective and behavioral outcome. This model was tested in an identical manner to customer satisfaction presented above.

Results from the first model testing the interactive effect of mood and time revealed a marginally significant effect. Examining the interaction more closely showed that a more positive mood at the end of the shift resulted in a higher tip percentage, but mood had no effect at the beginning of the shift. Overall, tip percentages declined over the course of the evening, but when servers reported having a more positive mood at the end of the shift their tip percentage did not actually decline.

This finding presents an interesting disconnect between the relationship of mood and customers ratings of satisfaction and how mood influences their actual tipping behavior over the course of an evening. A more positive mood is associated with higher ratings of satisfaction at the beginning of the shift, but has no relationship with tip percentages at that same point in time. However, at the end of the shift a more positive
mood is unassociated with customer satisfaction, but is related to increased tip percentages. Both findings partially support the emotional contagion theory in that an employee positive mood has an influence on customers, but the findings ultimately draw into question how servers’ mood influences the customers’ decision to rate their satisfaction and leave tips. Perhaps these unexpected findings were simply the result of chance as the final outcome examined, tip deviation, described later, showed no relationship with mood over time.

After examining the role of mood and time on tip percentages, I next entered surface acting as a predictor. Like customer satisfaction, server surface acting did not predict tip percentage. This finding provides further evidence that surface acting is an ineffective strategy for eliciting positive customer reactions. Again, perhaps servers leaked their actual felt mood or customers perceived the displayed mood was inauthentic and as such failed to reward the server with an increased tip.

Finally, I tested the interaction of ego depletion and time as a predictor of tip percentage while controlling for mood, time, and the interaction of mood and time. This interaction was also significant and revealed high levels of ego depletion were associated with lower tip percentages at the beginning of the shift, but with higher tip percentages at the end of the shift. This finding indicates that customers initially provided servers less money for being depleted, but later gave servers larger tips for being depleted.

There are several plausible explanations for this finding. Servers could have systematically differed on ego depletion ratings over the course of the evening. Customers could have also systematically differed in their willingness to provide tips
over the course of the evening. Or, a combination of both of these factors could explain the unexpected finding.

The most likely explanation is that there was a systematic difference between customers eating at the restaurant earlier in the evening and those eating later in the evening. Perhaps these customers differed in their willingness to tip based on perceived effort. Perhaps customers of restaurants value effort placed into creating positive mood displays more later in the evening when they themselves are starting to experience decreases in mood, even if the effort is unsuccessful as was the case with surface acting.

*Tip Deviation Outcome*

As was previously mentioned, tip deviation was the final outcome measure examined within the surface acting path. Tip deviation was assessed by asking customers to rate the extent to which the tip they left for the server was higher or lower than a tip they normally leave for restaurant servers. Results from parameters entered into this model indicated only the interaction of surface acting and time predicted tip deviation. Mood, the time and mood interaction, ego depletion, or the time and ego depletion interaction has no effect of tip deviation.

The surface acting by time interaction revealed that high levels of surface acting at the beginning of the shift were associated with lower-than-normal tips left by customers. Surface acting was unrelated to tip deviation at the end of the shift.

This finding is especially interesting and provides some insight into the varying relationship between ego depletion and tip percentage over time described above as tip percentage and tip deviation are conceptually and empirically linked. At the beginning of
the shift servers engaging in high levels of surface acting have customers that report that they are supposedly giving lower-than-normal tips. These servers also report higher levels of ego depletion which is associated with actual decreases in tip percentages even though surface acting is unrelated to tip percentages. At the end of the shift, however, servers engaging in high levels of surface acting supposedly receive tips that do not differ from what customers normally tip. While the act of surface acting itself has no effect on the actual tips at the end of the shift, the effort servers invest into surface acting does result in actual increases in tips.

This finding provides more evidence that customers dining out early in the evening, who may be in a good mood, may be able to detect fake emotional displays and then punish servers for doing so by providing lower-than-normal tips. In addition to experiencing supposed lower-than-normal tips, the server becomes more ego-depleted, which could eventually affect well-being. This all changes, however, late in the evening, when customers may still be able to detect fake emotional displays, but fail to punish servers for faking positive mood displays. Instead, the customers actually reward servers for investing effort with increased tips, even if the tip is an amount typically left for servers who fake positive moods. Perhaps these customers later in the evening recognize that their own mood is declining and the server is doing his or her best to improve the customers’ mood, thereby rewarding servers. Unfortunately, the effort regulating the mood display does little to improve the customers’ actual satisfaction.

In summary, increased surface acting is a strategy that some servers used when they reported experiencing a negative mood. Servers reporting engaging in high levels of
surface acting also reported being more depleted and this relationship became stronger over the course of a shift. Server mood did influence customer ratings of satisfaction and tip percentage differently over the course of the shift which was possibly a function of diurnal changes in the energetic arousal component of mood. Perhaps customers dining out later in the evening who experienced a decline in positive moods appreciated servers’ efforts to display a positive mood and rewarded that effort with increased tips, even though the act of surface acting itself had no effect on actual tipping behavior. Clearly, a complicated set of interrelated processes occurred in these exchanges and much more research is needed to understand how mood, energy, and emotion or mood regulation plays a role in customer satisfaction and behavior.

**Deep Acting Path**

Deep acting is an antecedent focused emotion regulation strategy (Grandey, 2000). This strategy is markedly different from surface acting because employees who engage in deep acting seek to actually change their felt mood so that it matches the display rule. Changing one’s felt mood has very different and important implications for all outcomes relative to surface acting. Indeed, results showed a very different pattern of relationships among the variables associated with deep acting than those same variables had with surface acting. The remainder of this section will discuss the relationships between deep acting and associated variables as they were uncovered over time.

**Deep Acting Outcome**

The first model I tested included deep acting as an outcome measure and mood, time, and their interaction as predictor variables. I hypothesized that mood would
initially be negatively related to deep acting, but that relationship would flatten out over time. The logic I used to support this hypothesis was that deep acting actually works by changing one’s mood (Grandey, 2000). Thus, if an employee went to work experiencing a negative mood that employee would engage in deep acting in order to alter his or her mood to meet the display rule. Upon altering his or her mood the employee would no longer need to engage in effortful deep acting to meet the display rule. As such, the relationship between mood and deep acting would approach zero as the evening advanced. The data supported this argument to a degree. The relationship between mood and deep acting was initially negative. A more negative mood was associated with higher levels of deep acting. Furthermore, the negative slope flattened (became more positive) as the evening advanced, but instead of stopping at no relationship the slope continued advancing in the positive direction until at the end of the evening a more positive mood was associated with higher levels of deep acting.

This finding poses a problem for the Control Theory explanation used to describe how employees regulate their emotions in the context of a service setting. Diefendorff and Gosserand (2003) argued that employees engaging in emotional labor do so because there is a discrepancy between the felt emotion and the emotion that should be displayed. Based on this discrepancy, employees then engage in emotion regulation to reduce the discrepancy. Once the discrepancy has been eliminated the theory would state that no further regulation would be required and the employee would cease regulatory efforts. The present dissertation, however, found that employees continued regulating their mood even after reaching a more positive mood.
Recent literature on mood maintenance and savoring positive moods may provide one explanation for these findings (Bryant, 1989, 2003; Kokkonen & Pulkinnen, 1999, 2001; Lischetzke & Eid, 2006; Mayer & Stevens, 1994). Researchers have shown that individuals, especially extraverts, like to experience and maintain states of positive affect (Lischetzke & Eid, 2006; Rusting & Larsen, 1995). Some individuals will invest a great deal of effort in order to maintain positive moods (Lischetzke & Eid, 2006) because they wish to savor the moment. Combined, these findings provide an explanation as to why servers continued to deep act even after initially boosting their mood. Moreover, this research is consistent with the theory presented by Diefendorff and Gosserand (2003) in that mood states cause one to engage in emotion regulation in order to alter, or in this case, maintain a certain mood.

Still, empirically, the predictor-outcome specification appears to shift at some point during the evening from a negative mood causing increased deep acting to increased deep acting causing a positive mood. Conceptually, this is consistent with the goal of deep acting, which is to change one’s felt mood. In order to reconcile the empirical findings with the stated hypotheses, I first tested the model specified by the hypotheses in which mood caused deep acting, but I also tested an alternative model in which deep acting acted as a predictor of mood and the variation of this relationship over time.

As I have already discussed the relationship between mood and deep acting over time, I now turn to the opposite causal order and examine how deep acting predicts mood differently over the course of a shift. Results from the moderated MLM revealed a
significant interaction. Decomposing the interaction showed that high levels of deep acting initially resulted in a more negative mood, but as the evening progressed high levels of deep acting were associated with a more positive mood. Coupling this finding with the original hypothesized relationship seems to fit the theoretical picture the best. That is, a negative mood at the beginning of the shift resulted in higher levels of deep acting. Individuals who engaged in higher levels of deep acting were then able to elevate their mood later in the shift. This shows that deep acting is an effective strategy for altering one’s mood state as Grandey (2000) and Gross (1998) proposed.

_Ego Depletion Outcome_

Ego depletion is a state of diminished self-regulatory resources that limits future acts of self-regulation (Baumeister 2002). Since deep acting is an emotion regulation strategy that some employees use more frequently, I hypothesized that it would lead to increased levels of ego depletion. However, I also hypothesized that the relationship would follow a nonlinear trajectory such that deep acting would initially be strongly positively related to ego depletion, but the relationship would diminish over time. I argued that the goal of deep acting is to change one’s felt mood and after that mood has been acquired there would no longer be the need to deep act.

In the original hypothesized model, I argued that a negative mood would trigger the employee to engage in deep acting, which would result in increased ego depletion. I previously found and discussed how the relationship between mood and ego depletion was negative and became stronger over the course of the evening. After uncovering the
mood-ego depletion relationship I turned to the role deep acting plays in explaining that relationship.

In the original model, deep acting, a natural log transformation of time and their interaction were entered as predictors controlling for the mood and time variables. This was done to test whether deep acting mediated the mood-ego depletion relationship differently over time. Results from this model failed to even show a relationship between deep acting and ego depletion, let alone a more complex relationship over time. Previous meta-analytic research also failed to show a relationship between deep acting and emotional exhaustion, a similar construct to ego depletion (Bono & Vey, 2005). Thus, deep acting does not appear to be related to ego depletion when controlling for mood.

The alternative model specified that deep acting would result in a more positive mood which would then be related to less ego depletion. This model was tested by examining the relationship between deep acting and ego depletion over time without controlling for mood. Results from this model revealed that deep acting was initially positively related to ego depletion and the relationship declined over time. Thus, without controlling for mood the relationship between deep acting and ego depletion was as hypothesized, supporting the idea that less effort is needed later in the shift.

The second step of the alternative model tested whether deep acting resulted in a more positive mood which then was associated with lower levels of ego depletion over time. Results from this test revealed that a more positive mood was associated with lower levels of ego depletion and this was especially the case late in the shift. Furthermore, mood significantly partially mediated the relationship between deep acting
and ego depletion over time such that at the beginning of the shift high levels of deep acting were associated with increased levels of deep acting because the employee was experiencing a negative mood. However, at the end of the shift, higher levels of deep acting resulted in the employee experiencing an elevated mood which was also associated with lower levels of ego depletion. The finding supports previous research conducted by Tice et al. (2007). Tice et al. argued that positive affect can work to restore self-regulatory resources therefore reducing ego depletion. Findings from the present dissertation suggested that employees who work to experience an increased mood may actually achieve their goal. Moreover, the elevated mood may serve to restore resources utilized to acquire the more positive mood. Thus, deep acting appears to be a win-win situation. It helps employees meet the display rule by elevating their mood which in turn helps to restore any resources used to self-regulate.

*Customer Outcomes*

The final six models (three hypothesized and three alternative) models examined the role of deep acting in generating positive ratings of customer satisfaction, higher tip percentages, and higher-than-normal tip percentages. Based on the emotional contagion literature, an elevated employee mood should elicit positive customer outcomes by increasing the customers’ moods. I argued that employees may elevate their own mood by using the deep acting emotion regulation strategy.

While results indicated that server mood was an important predictor of customer ratings of satisfaction and tipping behavior, deep acting was unrelated to any of the customer outcomes. As such, the hypothesized process of mood working through deep
acting and ego depletion to predict customer outcomes over time could not be tested. The null finding for each of the customer outcomes is at odds with previous research findings which have shown that deep acting results in more authentic mood displays, which is in turn related to more positive customer outcomes (Henig-Thurau et al., 2006).

However, it is also not surprising that deep acting was unrelated to customer outcomes when one considers that deep acting is a hidden process that is more distal to customer outcomes than mood. Grandey (2000) argued that deep acting is an antecedent focused emotion regulation strategy. That is, deep acting likely occurs before an employee even interacts with a customer. The result of deep acting, a more positive and authentic mood display should be more evident to customers than the process itself. Indeed, Henig-Thurau et al. (2006) did not measure deep acting per se; rather they used display authenticity as a proxy for deep acting. Thus, in hindsight it makes sense that customers are more likely to respond to the outcome of deep acting and not the actual process that occurred sometime before the actual customer encounter.

In summary, deep acting is an emotion regulation strategy that was linked in the present dissertation to a more negative mood at the beginning of the shift, but a more positive mood at the end of the shift. Essentially, deep acting was used at the beginning of the shift to alter a negative mood into a more positive mood and was then used later in the shift to maintain that positive mood. While deep acting was initially effortful, leading to increased ego depletion, the resulting positive mood potentially helped to replenish the resources initially used to overcome the negative mood. Finally, given that deep acting is
a process hidden from customers (and potentially occurring before any customer contact),
it is not surprising that it was not directly related to customer outcomes.

Seeing the Forest and Drawing Implications

To this point in the discussion I have focused on the specific relationships the
variables exhibited among themselves. I have provided a detailed analysis of these
relationships at the expense of understanding the broader picture. Clearly, understanding
the details of the relationships among the variables is important and can guide researchers
and employers in making decisions concerning how emotional labor strategies work to
influence mood, ego depletion, and customer satisfaction. However, stepping back and
seeing the whole “picture” may prove more beneficial in some instances for making
recommendations to workers in the service industry. As such, in this section of the paper
I present a more integrated and broader description of the findings and implications of
these findings for employers and employees.

Results from the present study generally revealed that servers may use emotion
regulation strategies of surface acting and deep acting to overcome negative moods they
experience. Unfortunately, these strategies are depleting, but they depleted regulatory
resources differently depending on when during the shift the strategies were used. Both
surface acting and deep acting were moderately depleting at the beginning of the shift.
At the end of the shift surface acting was especially depleting, but deep acting was no
longer depleting, and actually replenishes resources. This finding implies that employees
who rely on surface acting more will likely always go home with fewer self-regulatory
resources. Employees who engage in deep acting could actually go home with more self-regulatory resources than when they began the shift.

This finding has important implications for what occurs both on the job and outside of work. Concerning what occurs on the job, employees who are more likely to use surface acting may experience more regulatory failure, especially later in the evening. Employees who experience regulatory failure are more likely to perform poorer on cognitive tasks (Zyphur, Warren, Landis, & Thorensen, 2007). Perhaps these employees are more likely to make mistakes entering customers’ orders or make promises to customers that the server cannot fulfill. Mistakes and empty promises are likely to impact ratings of customer satisfaction and tip percentages and may even do so more than mood displays.

Concerning what occurs after work, service employees who use surface acting at work may be more likely to fail at acts of self-regulation at home. Perhaps these employees are more likely to take out frustration on their partners or children. People who engage in deep acting, on the other hand, may actually have more regulatory resources to interact with people outside of work.

Based on the present findings and implications of the findings, it is clear that organizations employing service workers should train their employees to use deep acting strategies. Organizations often spend a large amount of resources training employees on the intricacies of the service job (Townsend, 2007), and this training has been shown to reduce emotional exhaustion (Chen & Lin, 2009), but it appears as though organizations
spend very little time training employees on emotion regulation strategies, as I was unable to uncover any literature discussing these programs or the efficacy of them.

In addition to revealing the process whereby servers experienced differing levels of ego depletion over the evening by engaging in surface acting or deep acting to modify their mood, the data also showed that mood and ego depletion were important predictors of customer outcomes, even if surface acting and deep acting were generally unrelated. These data clearly indicated that portraying a positive enthusiastic mood was especially important for servers. Furthermore, as servers became more depleted over the course of the evening customer outcomes generally declined.

This finding has important implications for the financial well-being of servers and restaurants. Experiencing and portraying positive moods can help increase servers’ earning potential. Furthermore, satisfied customers are more likely to talk positively about the restaurant and remain loyal to the restaurant.

Limitations and Directions for Future Research

Like all studies, the present dissertation had a number of limitations. While still a strong study, a number of problems limit our understanding the emotional contagion process and how emotion regulation works to make emotional contagion occur in a service setting and what effect this process has on customer satisfaction and tipping behavior.

First, I never actually measured the mood of the customers. In order to determine if customers actually caught the servers’ mood, I would have needed to measure the customers’ mood before and after interacting with the server. Measuring the mood of the
customers before and after the interaction would also allow the researcher to determine if customers’ moods generally decline over the course of an evening and whether employees can actually do anything to influence mood late in the evening.

Another limitation of the present dissertation was the sample size. Although the sample size was adequate to detect a number of significant interactions, there were several additional effects that were approaching significance that could not be explained because they did not meet the statistical threshold. Additionally, with increased power a model including both surface acting and deep acting could have been run instead of two separate models as was specified in this dissertation. This is important because employees could use both acting strategies simultaneously. For example, a server who is in the process of deep acting when encountering a customer may need to also use surface acting to overcome any residual emotional dissonance that is present. Perhaps using both strategies simultaneously is especially harmful to employees and customers. Thus, surface acting and deep acting could interact to predict important outcomes like ego depletion and customer satisfaction. In order to uncover such an interaction along with time in a model including mood and ego depletion several more degrees of freedom lowering the likelihood of finding a significant effect. With a sufficient sample size, however, one need not be as concerned about degrees of freedom.

A final limitation of the present study is the fact that causal inferences cannot be made because of the study design. Even though the theory used to generate the hypotheses specifies mood leads to emotional labor which leads to ego depletion which then leads to customer outcomes, the correlational design of the study precludes one from
drawing causal inferences. This was clearly evidenced by the fact that based on theory; mood initially was hypothesized to cause deep acting. However, later in the evening it makes more sense for deep acting to actually cause an increased mood rather than a more positive mood to result in increased deep acting. If anything, this finding highlights limitations in two theories, Control Theory and Mood Maintenance theory of self-regulation, that are actually both based on self-regulation theory. An experimental design in which mood and deep acting are manipulated over time would prove beneficial in uncovering the temporal order of the two constructs.

Finally, the present dissertation left a number of questions unanswered and raised additional questions that need examining. For example, as was already discussed, the mood of the customers was not measured. Future studies should measure the mood of both employees and customers at multiple points in time. Since emotions and moods are dynamic, it is imperative to get measure them at multiple time points. Doing so would provide a much stronger case for emotional contagion theory.

Another logical direction for future research is to examine how mood and ego depletion influence counterproductive work behaviors in an emotional labor setting. Since a state of ego depletion generally prevents one from engaging in further acts of self-regulation, it seems reasonable that depleted individuals may be more likely to engage in acts of deviance, especially against customers. Individuals depleted from regulating their emotions may be more likely to retaliate against rude and inconsiderate customers. This may be especially true when the employee is experiencing a more negative mood (Lee & Allen, 2002).
Still another area that needs to be examined is individual difference moderators of the relationships uncovered in this dissertation. All of the relationships identified in this paper were between level 1 predictor and outcome variables. That is, I only examined the relationships between variables across measurement occasions within individuals. There is a whole host of between individual variables that could influence the strength and even direction of the relationships found. For example, Emotional Intelligence is one construct that researchers frequently measure in organizations in which people work with other people. Emotional Intelligence refers to one’s ability, skill, or disposition in identifying, assessing, managing, and manipulating emotions in one’s self and others (Goleman, 1995). Individuals that have higher emotional intelligence may have more emotional resources, or they may be more efficient at using the resources they have, which would result in lower levels of ego depletion over the course of a shift.

Combined, addressing the limitations of the present research with more carefully planned studies and answering questions raised by findings from the present study have the potential to provide for a long and fruitful career studying emotional labor and its correlates. Addressing these issues have the potential to truly impact the lives of customer service workers for the better and provide organizations with a more effective and healthy workforce.
# Appendix A

## Emotional Labor

Thinking about the customer interaction you just had, please answer the following questions.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree or Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I put on an act in order to deal with the customers in an appropriate way</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2.</td>
<td>I faked having a good mood when interacting with the customers</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I put on a “show” or “performance” when interacting with the customers</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>4.</td>
<td>I put on a “mask” in order to display the emotions I needed in the task.</td>
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<td></td>
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<tr>
<td>5.</td>
<td>I showed feelings to customers that were different from what I felt inside.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I faked the emotions I showed when dealing with the customers</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I tried to actually experience the emotions I was to show the customers</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I made an effort to actually feel the emotions I was to display toward the customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I worked hard to feel the emotions that I needed to show the customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10.</td>
<td>I worked at developing the feelings inside of me that I needed to show to the customers.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11.</td>
<td>I just pretended to have the emotions I needed to display for the task.</td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>
Appendix B

Mood

Please respond to the following question by placing an “X” in the appropriate box.

**At this moment I feel:**

<table>
<thead>
<tr>
<th>Very discontent</th>
<th>Very content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very agitated</td>
<td>Very calm</td>
</tr>
<tr>
<td>Very tired</td>
<td>Very awake</td>
</tr>
<tr>
<td>Very tense</td>
<td>Very relaxed</td>
</tr>
<tr>
<td>Very unhappy</td>
<td>Very happy</td>
</tr>
<tr>
<td>Very without energy</td>
<td>Very full of energy</td>
</tr>
<tr>
<td>Very unwell</td>
<td>Very well</td>
</tr>
</tbody>
</table>
Please answer the following questions by placing an “X” in the appropriate box using the scale below.

<table>
<thead>
<tr>
<th></th>
<th>Very Mild: Barely Noticeable</th>
<th>Somewhat Mild</th>
<th>Mild</th>
<th>Moderate</th>
<th>Somewhat Strong</th>
<th>Strong</th>
<th>Very Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel physically fatigued after dealing with the customer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I feel emotionally fatigued after dealing with the customer</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2. Working with these customers is really putting a strain on me</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>3. I feel emotionally drained by a job like this</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix D

Customer Satisfaction and Demographics

Please rate your experience with your server this evening on the scale below. Place an “X” in the appropriate box to provide your rating.

| Dissatisfied | | | | | | Satisfied |
|--------------|--------------|----------------|----|----------------|--------------|
| Unfavorable  | | | | | | Favorable |
| Unpleasant   | | | | | | Pleasant |
| I didn’t like him/her at all | | | | | | I liked him/her very much |

To what extent was the tip percentage you left for the server different from your normal tipping behavior?

| Very much less than normal | | | | | | Very much more than normal |

Age_____
Gender: M   F
Appendix E

Server Demographics

Age _____
Gender: M  F
How long (in months) have you worked here? ______
How long (in months) have you been a server? ______
While suppression of felt emotions not matching the display rule is important, the dominating emotional labor literature has focused on the regulation strategies of surface and deep acting. As such, the present dissertation focused on these two constructs while employing an established measure that included suppression.
REFERENCES


