A longitudinal analysis of the association between emotion regulation, job satisfaction, and intentions to quit

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Summary

The present longitudinal study explored the association between emotion regulation, defined as the conscious manipulation of one’s public displays of emotion, and job satisfaction and intentions to quit. We predicted, based on an emotional dissonance model, that the suppression of unpleasant emotions decreases job satisfaction and increases intentions to quit. We propose a social interaction model that predicts that the amplification of pleasant emotions increases job satisfaction and decreases intentions to quit by improving the quality of interpersonal encounters at work. Data from 111 workers were gathered at two time points separated by four weeks. Advantages of the design included the use of longitudinal data and the statistical control for several personality, job, and demographic factors. Longitudinal regression analyses and tests of mediation revealed that, as predicted, (a) the suppression of unpleasant emotions decreases job satisfaction, which in turn increases intentions to quit, and (b) the amplification of pleasant emotions increases job satisfaction. Applied implications are discussed and suggestions for future research are offered. Copyright © 2002 John Wiley & Sons, Ltd.

Introduction

Organizational members frequently regulate their expressions of emotion in the workplace. Such regulation of emotion expressions typically benefits organizations. Several theorists have argued that emotion regulation may also induce stress in workers (e.g., Ashforth & Humphrey, 1993; Hochschild, 1983). Despite important theoretical and empirical advances in this field, the research does not offer definitive conclusions concerning the association between workers’ emotion regulation and their job satisfaction and intentions to quit. The goal of the present study was to advance knowledge of the relation of emotion regulation to job satisfaction and intentions to quit.

Emotion regulation

Most emotion theorists agree that (a) appraisals of important events trigger an emotion and (b) an emotion changes physiology, facial and bodily expressions, behavior, cognition, and subjective

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experiences, so that responses to challenges and opportunities are optimized (e.g., Frijda, 1986; Levenson, 1994; Weiss & Cropanzano, 1996). Within this componential model of emotion, emotion regulation includes all of the conscious and unconscious efforts to increase, maintain, or decrease one or more components of an emotion (Gross, 1999). Antecedent-focused emotion regulation concerns the manipulation of the input to the system (Gross, 1998). For example, individuals can appraise a threat as harmless to lower their experience of fear. Response-focused emotion regulation, in contrast, concerns the manipulation of output from the system (Gross, 1998)—manipulations of physiology, facial expressions, behavior, and cognition once an emotion is experienced. For example, angry subordinates tend to hide the anger they experience from their bosses (Fitness, 2000). Individuals exhibit more elevated signs of strain when they engage in response-focused emotion regulation (e.g., trying not to let any of their feelings show while watching a movie that elicits emotion) than when they engage in antecedent-focused emotion regulation (e.g., watching a movie in such a way that no emotions are felt at all) or when they do not regulate their emotions (Gross, 1998). The present study focused on conscious response-focused emotion regulation because it is the form of emotion regulation that seems most related to strain. Further, the present study focused on the responses that are involved in the public display of an emotion—facial expressions and vocal and bodily signals. For the sake of simplicity, hereafter the term emotion regulation is used to refer exclusively to the conscious regulation of the responses to an emotion that are involved in its public display.

**Dimensions of emotion regulation**

Researchers have identified two conceptually meaningful types of emotion regulation, namely, emotion amplification and emotion suppression. Emotion amplification refers to ‘faking,’ or exaggerating displays of emotions that are not at all experienced or experienced at low levels internally (Ekman & Oster, 1979; Zuckerman, Klorman, Larrance, & Spiegel, 1981). For example, bank tellers amplify their displays of pleasant emotion to increase the quality of the service they provide (Pugh, 2001). In contrast, emotion suppression refers to hiding displays of emotions that are actually experienced internally (Gross & Levenson, 1993; Zuckerman et al., 1981). Subordinates suppress their emotions, for example, when they hide anger from their boss.

Although there is disagreement on this topic, many researchers believe that two basic emotional systems exist: one is concerned with pleasantness and the other with unpleasantness (Davidson, 1998; Isen, 1999). This view is based on evidence, for example, that different neural structures are implicated in pleasant and unpleasant emotions (Davidson, 1998; LeDoux, 1996) and that pleasant and unpleasant emotions have differential influences on cognition (Isen, 1999; Schwarz, 1990). This evidence suggests that the regulation of pleasant emotions might have different effects than the regulation of unpleasant emotions. The present research focused on the effects of two forms of emotion regulation that were reported to occur most frequently in our pilot research, namely, the amplification of pleasant emotions and the suppression of unpleasant emotions (also see Schaubroeck & Jones, 2000).

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1We intentionally do not refer to the construct of *emotional labor* because our focus was broader than that of traditional conceptions of emotional labor. Hochschild defined emotional labor as ‘the management of feeling to create a publicly observable facial and bodily display; emotional labor is sold for a wage and therefore has exchange value’ (1983, p. 7). Ashforth and Tomiuk (2000) defined emotional labor as ‘the act of conforming (or attempting to conform) to display rules or affective requirements that prescribe on-the-job emotion expression’ (2000, p. 184). Our definition of emotion regulation includes the regulation of public displays of emotion in interactions with bosses, subordinates, co-workers, and in volunteer work that is not done for a wage. We also include in our definition the regulation of public displays of emotion that are not prescribed by rules, such as when an employee smiles to get promoted. Therefore, we use Gross’s (1998) terminology, which encompasses a broad array of emotion regulation behaviors.
Emotion regulation, job satisfaction, and intentions to quit

The prevailing approach to understanding how emotion regulation relates to job satisfaction and intentions to quit concerns emotional dissonance. Emotional dissonance is a state of discrepancy between public displays of emotions and internal experiences of emotions (Ashforth & Humphrey, 1993; Rafaeli & Sutton, 1989) that often follows the process of emotion regulation (Grandey, 2000). For example, Disney employees who amplify their displays of enthusiasm experience a discrepancy between their public display and their internal experience of enthusiasm (Van Maanen & Kunda, 1989).

Theorists have proposed that emotional dissonance is psychologically taxing (Ashforth & Humphrey, 1993; Hochschild, 1983; Morris & Feldman, 1996). Two field studies found that self-reports of emotional dissonance are associated with high emotional exhaustion, low organizational commitment, and low job satisfaction (Abraham, 1999; Morris & Feldman, 1997). Also, laboratory experiments showed that the suppression of displays of emotion while watching emotionally laden movies, which creates emotional dissonance, increases some physiological indicators of strain (e.g., Gross, 1998; Gross & Levenson, 1993). The emotional dissonance framework served as the basis for our predictions concerning the effects of the suppression of unpleasant emotions, as follows:

**Hypothesis 1**: The suppression of unpleasant emotions decreases job satisfaction.

**Hypothesis 2**: The suppression of unpleasant emotions increases intentions to quit.

Researchers who advocated an emotional dissonance approach have illuminated how workers’ efforts to regulate their emotions impact their experience of job satisfaction and intentions to quit. Notwithstanding such important contributions, we believe the emotional dissonance approach to be limited because it focuses predominantly on the *intraindividual* consequences of emotion regulation and insufficiently incorporates the *interpersonal* context of emotion regulation. A social interaction model complements the emotional dissonance approach, by accounting for how (a) an employee’s emotion regulation impacts other persons, and (b) the other persons’ responses to the employee’s emotion regulation impacts the employee. Taking the social interaction perspective, workers’ emotion regulation might beget responses from others during interpersonal encounters that subsequently impact their own job satisfaction and intentions to quit. This proposition is based upon past research that supports that displays of emotion convey substantial information about individuals’ goals and interests in social interactions, and as a result, displays of emotion coordinate interpersonal encounters (Kelly & Barsade, 2001; Keltner & Kring, 1998; Rafaeli & Sutton, 1989). For example, people who display signs of embarrassment after violating a social norm are forgiven more easily than people who display no emotion (Keltner & Buswell, 1997). Based upon the theoretical and empirical evidence of the role of emotions in interpersonal encounters, we propose that certain types of emotion regulation have positive effects on work outcomes such as job satisfaction and intentions to quit. In particular, we used the social interaction model to make predictions concerning the effects of the amplification of pleasant emotions.

Displays of happiness signal that one is open to friendly social interaction (Harker & Keltner, 2001). People who display positive emotions are judged by others as sociable, pleasant, and likeable (Clark, Pataki, & Carver, 1996). As a consequence, displays of happiness beget agreeable behavior and strengthen social bonds (Keltner & Bonanno, 1997). For example, customers express high satisfaction with service interactions (Pugh, 2001) and indicate a willingness to return to a store (Tsai, 2001) after interacting with pleasant service agents. The accumulation of favorable responses to displays of pleasant emotions might therefore positively affect work outcomes over time, as follows:

**Hypothesis 3**: The amplification of pleasant emotions increases job satisfaction.
Hypothesis 4: The amplification of pleasant emotions decreases intentions to quit.

There are two conceptual reasons why the suppression of unpleasant emotions might not impact social relationships, and hence, job satisfaction and intentions to quit, in the same way as the amplification of pleasant emotions. First, displays of unpleasant emotions cannot be entirely suppressed even if intense efforts are exerted, a phenomenon previously termed leakage (Ekman, Friesen, & O’Sullivan, 1988; see Gross, 1998, for evidence). Suppressed, but not eliminated, displays of unpleasant emotions are unlikely to improve social interaction. Second, it can be assumed that efforts to suppress unpleasant emotions are exerted in social settings that are aversive. For example, workers might experience anger after being unjustly treated (Fitness, 2000). Suppressing unpleasant emotions such as anger might prevent aversive social interactions from escalating. Yet, such suppression does not necessarily improve aversive social settings. For these reasons, we expected that the suppression of unpleasant emotions would decrease job satisfaction and increase intentions to quit, as predicted by the emotional dissonance model.

The last goal of the present investigation was to examine whether job satisfaction mediates the effect of emotion regulation on intentions to quit. Job satisfaction, as an attitude about one’s job (Weiss, 2002), generates tendencies to approach or avoid the job. It has thus been theorized that job satisfaction precedes intentions to quit in models of turnover (e.g., Mobley, Griffeth, Hand, & Meglino, 1979). Consistent with these conceptual arguments, past research has found a moderately strong effect of job satisfaction on intentions to quit, but a very small effect of intentions to quit on job satisfaction (Carsten & Spector, 1987; Steel & Ovalle, 1984). We therefore predicted that:

Hypothesis 5: The effect of the amplification of pleasant emotions on intentions to quit is mediated by job satisfaction.

Hypothesis 6: The effect of the suppression of unpleasant emotions on intentions to quit is mediated by job satisfaction.

To our knowledge, no field study has explicitly tested whether emotion regulation precedes and possibly causes job satisfaction and intentions to quit, because past studies have used cross-sectional, self-report designs. Comparing the effects of emotion regulation on work experiences to the effects of work experiences on emotion regulation represents an important step in this field that has not yet been fulfilled. Thus, in the present research, emotion regulation, job satisfaction, and intentions to quit were measured longitudinally. Another advantage of the design of the present study is that concerns about third variables producing spurious associations (Cook & Campbell, 1979) were alleviated by (a) collecting data longitudinally and conducting hierarchical regression analyses with lagged effects (Pedhazur, 1982; Zapf, Dormann, & Frese, 1996) and (b) explicitly controlling for personality, job, and demographic variables that are associated with emotion regulation, job satisfaction, and intentions to quit.

Organizational Context

Growth of the Service Industry in the USA
The service industry experienced substantial growth during the last decades of the 20th century. The new service economy has increased the frequency and duration of interactions between employees.
and individuals both inside and outside of their organizations. Many organizations now advertise ‘service with a smile.’ Because managers believe that pleasant employee behavior influences purchase decisions, many businesses have explicit or implicit rules for displaying emotions to customers. Many stores, for example, encourage their salespeople to display pleasant emotions such as enthusiasm and interest and to hide unpleasant emotions such as anger and frustration.

**Implications for Employees**

Employees have limited control over the emotions that they display at work. Rules for displaying emotions influence employee behavior on a daily basis. Salespeople know, for example, that their performance evaluations depend on whether they display pleasant emotions to customers. Thus, employees regulate their emotion not only for personal reasons, such as improving their chances of promotion, but also because of organizational requirements for specific displays of emotion.

**Employees**

The participants in this study were undergraduate students at a large, Midwestern, public university. They were young workers with relatively limited experience in organizations. Many participants worked in the service industry; in restaurants, libraries, and stores on the university campus. Their jobs required frequent interaction with bosses, co-workers, and customers. Because they were mainly students, work was less central to the participants than most full-time workers.

**Time**

The study took place in the late 1990s, when the economy in the USA was relatively strong. Informal interviews with students who did not take part in this study informed us that many jobs were available on the university campus. Because the economy was strong, students were motivated to acquire experience in hope of obtaining a prestigious job upon graduation.

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**Method**

**Participants**

We reasoned that working college students would be appropriate informants for a study of emotion regulation because their jobs are often in the service industry and frequently require interaction with bosses, co-workers, and customers. Participants were 78 female and 33 male working college students who took part in this study as part of a course requirement. Six participants did not hold the same job four weeks after completing the first questionnaire. These six individuals did not complete the second questionnaire and were dropped from the analyses. Further, two individuals completed both questionnaires but provided incomplete data. To conduct hierarchical linear analyses with the same sample at every stage, we dropped these two individuals from the analyses. Analyses revealed that these eight individuals did not differ from the 111 participants in their amplification of pleasant emotions, suppression of unpleasant emotions, job satisfaction, and intentions to quit at time 1.

The mean age of the 111 participants was 19.01 (SD = 1.06). Seventy-nine (71 per cent) individuals identified themselves as Caucasian, 13 (12 per cent) as Asian, 7 (6 per cent) as African American, 5 (5 per cent) as Latin, and 7 (6 per cent) as multi-racial or ‘other.’ Participants held a variety of jobs in the service industry that require emotion regulation (e.g., sales clerk, teacher’s aide, waiter/waitress).
Participants worked an average of 11.94 hours a week (SD = 6.35, range = 2–38). Most of the participants were paid for their work; only two (2 per cent) were volunteers.

Procedure

Two waves of data were collected. A research assistant unaware of the research hypotheses welcomed participants in a large laboratory room for the first session. Participants provided informed consent and completed a questionnaire. Four weeks after the initial session, participants returned to the laboratory to complete a second questionnaire. A time lag of four weeks was chosen because it allowed enough time for job satisfaction, intentions to quit, and emotion regulation to change but also allowed some constancy in the lives of the students sampled. Stressors other than emotion regulation have been found to predict changes in job satisfaction and intentions to quit over that period of time (e.g., Daniels & Guppy, 1994). A longer time lag might have substantially decreased retention, given that university semesters last only a few months and that college students change jobs relatively frequently. Emotion regulation, job satisfaction, and intentions to quit were measured both at time 1 and time 2 to perform hierarchical regression analyses with lagged effects that were critical to examine the direction of associations (Pedhazur, 1982; Zapf et al., 1996).

Measures

Emotion regulation

To measure the amplification of pleasant emotions, participants rated the extent to which they tried to enhance, or exaggerate, their displays of several emotional states to other people (e.g., customers, co-workers, supervisors) at work in the past four weeks on 7-point scales ranging from 1 (rarely) to 7 (very often). Three items were taken from Izard’s Differential Emotions Scale (DES; Izard, 1977): delighted, happy, and joyful. To measure the suppression of unpleasant emotions, participants rated the extent to which they tried to inhibit, or decrease, their displays of several emotional states to other people (e.g., customers, co-workers, supervisors) at work during the past four weeks on the same 7-point scales. Nine items from the DES were used to assess the suppression of unpleasant emotions: angry, mad, enraged, fearful, scared, afraid, sad, discouraged, and downhearted. There were more unpleasant emotions than pleasant emotions items because there exist, in theory, more discrete unpleasant emotions than discrete pleasant emotions (Ekman, 1992; Izard, 1977).

Job satisfaction

Spector’s (1994) 36-item Job Satisfaction Survey was used to assess job satisfaction. Participants indicated their agreement with each of 36 statements concerning their job using 6-point Likert-type scales, ranging from 1 (disagree very much) to 6 (agree very much). Validity evidence for the Job Satisfaction Survey is presented in Spector (1997).

Intentions to quit

To assess intentions to quit, participants were asked to indicate how often they seriously thought about quitting their job in the past month on a 6-point Likert-type scale, ranging from 1 (never) to 6 (extremely often; e.g., Spector, Dwyer, & Jex, 1988). This ‘intentions to quit’ item was correlated with indicators of strain in the expected direction in past research (e.g., positive correlations with anxiety and frustration and negative correlations with facets of job satisfaction; Spector et al., 1988), supporting the validity of that item.
Control variables

Emotional expressivity is a stable individual difference variable that reflects the extent to which people outwardly display their emotions (Kring, Smith, & Neale, 1994) and that could impact the association between emotion regulation and strain (Grandey, 2000). Because emotional expressivity reflects regular trends in emotion displays, controlling for that trait allowed for the examination of the effects of emotion regulation over and above normal expressive behavior. Thus, we controlled for emotional expressivity in all analyses. We administered the 17-item Emotional Expressivity Scale (EES; Kring et al., 1994). Sample items include: ‘People can read my emotions’ and ‘I keep my feelings to myself’ (see Kring et al., 1994, for validity evidence). Respondents indicated the degree to which the statements reflected their personality on a scale of 1 (never true) to 7 (always true). The EES was administered once, at time 2, because emotional expressivity is a stable trait (Kring et al., 1994).

Features of the environment likely influence the relation between emotion regulation, job satisfaction, and intentions to quit. In particular, the ‘busyness’ of a store predicts the emotional displays (and presumably, the emotion regulation) of clerks, such that clerks in busy stores infrequently display pleasant emotions (Pugh, 2001; Sutton & Rafaeli, 1988). An employee’s amount of work, or quantitative workload, also impacts job satisfaction and intentions to quit (Spector et al., 1988). Quantitative workload, measured with the 4-item Quantitative Workload Inventory (QWI: Spector & Jex, 1998), was thus controlled for in all analyses. Respondents indicated how often they experienced the events described in the items in the past month at work on a scale of 1 (less than once per month or never) to 5 (several times per day). Quantitative workload was assumed to be relatively stable: thus, the QWI was completed once, at time 1. Spector and Jex (1998) reported validity evidence for the QWI.

We controlled for the average number of hours worked per week because employees who worked long hours could have regulated their emotions more and also experienced different levels of job satisfaction and intentions to quit than their counterparts.

Finally, in all analyses, we controlled for gender, age, ethnic background, and whether individuals worked for pay or as volunteers. We controlled for gender because women engage in more emotion regulation than men in their jobs (Hochschild, 1983; Schaubroeck & Jones, 2000; Wharton & Erickson, 1993) and experience more psychological strain at work than men (Jick & Mitz, 1985). We controlled for age because older individuals might be better at regulating their emotions (Gross, Carstensen, Pasupathi, Tsai, Gottestam, & Hsu, 1997) and at handling stressors (Motowidlo, Packard, & Manning, 1986) than younger individuals. We controlled for ethnic background because members of minority ethnic groups (a) may be particularly motivated to regulate impressions (and hence, regulate their emotions) to manage relationships with majority group members in positions of greater power (Rosenfeld, Giacalone, & Riordan, 1994) and (b) can experience high levels of strain due to racism (Fernando, 1984). Finally, although to our knowledge no data are available on this topic, we reasoned that volunteers would have more control over their actions and as a result engage in less emotion regulation and experience less strain than paid workers. We therefore controlled for whether individuals worked for pay or as volunteers.

Results

Descriptive statistics

Inspection of Table 1 indicates that the amplification of pleasant emotions occurred more frequently than the suppression of unpleasant emotions. Also, (a) the two types of emotion regulation and (b) job
Table 1. Descriptive statistics and correlations between variables

<table>
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<tr>
<th>Variable</th>
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<td>2. Age</td>
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<td>3. Ethnic background</td>
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<td>4. Paid versus volunteer</td>
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<td>5. Amplify pleasant</td>
<td>4.71</td>
<td>1.66</td>
<td>0.90</td>
<td>0.16</td>
<td>−0.06</td>
<td>−0.16</td>
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<td>6. Suppress unpleasant 1</td>
<td>2.49</td>
<td>1.31</td>
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<td>0.09</td>
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<td>7. Amplify pleasant 2</td>
<td>3.72</td>
<td>1.65</td>
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<td>0.06</td>
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<td>−0.18</td>
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<td>8. Suppress unpleasant 2</td>
<td>2.17</td>
<td>1.21</td>
<td>0.91</td>
<td>0.06</td>
<td>−0.10</td>
<td>−0.07</td>
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<td>0.43</td>
<td>0.69</td>
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<tr>
<td>9. Intentions to quit 1</td>
<td>1.95</td>
<td>1.37</td>
<td>—</td>
<td>0.01</td>
<td>0.09</td>
<td>−0.04</td>
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<td>10. Intentions to quit 2</td>
<td>2.16</td>
<td>1.46</td>
<td>—</td>
<td>−0.02</td>
<td>0.18</td>
<td>0.07</td>
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<td>11. Job satisfaction 1</td>
<td>4.36</td>
<td>0.68</td>
<td>0.91</td>
<td>−0.05</td>
<td>0.08</td>
<td>0.01</td>
<td>0.04</td>
<td>−0.00</td>
<td>−0.17</td>
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<td>12. Job satisfaction 2</td>
<td>4.22</td>
<td>0.60</td>
<td>0.89</td>
<td>−0.04</td>
<td>0.01</td>
<td>−0.03</td>
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<td>13. Emotional expressivity</td>
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<td>14. Quantitative workload</td>
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<td>15. Hours</td>
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</table>

Note: n = 111; *p < 0.001; †p < 0.01; ‡p < 0.05.
Gender was coded as 1 = female, 0 = male. Ethnic background was coded as 1 = caucasian, 0 = non-caucasian. Paid versus volunteer was coded as 1 = paid, 0 = volunteer.
satisfaction and intentions to quit were significantly correlated at time 1. These correlations implied that inferential analyses of the impact of emotion regulation at time 1 on job satisfaction (or intentions to quit) at time 2 would need to control for the influence of one type of emotion regulation to ascertain the unique association between the other type of emotion regulation and job satisfaction (or intentions to quit).

**Effects of emotion regulation on job satisfaction**

Recall that Hypothesis 1 predicted that the suppression of unpleasant emotions decreases job satisfaction and Hypothesis 3 predicted that the amplification of pleasant emotions increases job satisfaction. A hierarchical regression analysis with lagged effects (Pedhazur, 1982) was conducted to examine the effects of emotion regulation at time 1 on job satisfaction at time 2. We used regression analysis rather than structural equations modelling because of our modest sample size. Variables entered in the first step were gender, age, ethnic background, whether work was paid or volunteer, and job satisfaction at time 1. Variables added to the model in the second step were emotional expressivity, quantitative workload, and hours worked. The suppression of unpleasant emotions at time 1 and the amplification of pleasant emotions at time 1 were added in the third step. Inspection of Table 2 reveals that Hypothesis 1 was supported; the suppression of unpleasant emotions at time 1 was negatively related to job satisfaction at time 2. The amplification of pleasant emotions at time 1 was positively related to job satisfaction at time 2. Hypothesis 3 was supported.

**Effects of emotion regulation on intentions to quit**

Recall that Hypothesis 2 predicted that the suppression of unpleasant emotions increases intentions to quit and that Hypothesis 4 predicted that the amplification of pleasant emotions decreases intentions to quit. A hierarchical regression analysis of intentions to quit on the same variables used to predict job satisfaction (described above) was conducted. Hypothesis 2 was supported; the suppression of unpleasant emotions at time 1 was positively related to intentions to quit at time 2. The effect of

<table>
<thead>
<tr>
<th>Step</th>
<th>ΔR²</th>
<th>F</th>
<th>df</th>
<th>Estimate</th>
<th>Job satisfaction</th>
<th>ΔR²</th>
<th>F</th>
<th>df</th>
<th>Estimate</th>
<th>Intentions to quit</th>
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<tr>
<td>Step 1</td>
<td>0.40*</td>
<td>14.27</td>
<td>5, 105</td>
<td>0.26*</td>
<td>7.45</td>
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<td>0.06</td>
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<td>0.57*</td>
<td>0.14</td>
<td>0.04</td>
<td>0.16</td>
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<tr>
<td>Gender</td>
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<td>0.06</td>
<td>0.16</td>
<td></td>
<td></td>
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<tr>
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<td>Paid versus volunteer</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Outcome at time 1</td>
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<td>0.04</td>
<td>1.92</td>
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<tr>
<td>Quantitative workload</td>
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<tr>
<td>Hours</td>
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<td>0.00</td>
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<tr>
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<td>3.48</td>
<td>2, 100</td>
<td>0.05</td>
<td>3.44</td>
<td>2, 100</td>
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<tr>
<td>Amplify pleasant</td>
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<td>0.07</td>
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<td></td>
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<tr>
<td>Suppress unpleasant</td>
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<td>−0.09</td>
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</tr>
</tbody>
</table>

**Note:** *p < 0.001; †p < 0.05; ‡p < 0.10.

Gender was coded as female = 1, male = 0. Ethnic background was coded as 1 = caucasian, 0 = non-caucasian. Paid versus volunteer was coded as 1 = paid, 0 = volunteer.
the amplification of pleasant emotions at time 1 on intentions to quit at time 2 was in the predicted negative direction but not statistically significant. Hypothesis 4 was not supported.

Mediation analyses

Recall that Hypothesis 5 predicted that the relation between the amplification of pleasant emotions and intentions to quit is mediated by job satisfaction. Hypothesis 6 predicted that the relation between the suppression of unpleasant emotions and intentions to quit is mediated by job satisfaction. To test mediational effects, we used the four-criteria procedure described by Kenny, Kashy, and Bolger (1998). Four criteria need to be met to determine that mediation occurs. Criterion 1 is met if the predictor is related to the outcome (i.e., emotion regulation at time 1 is related to intentions to quit at time 2). Criterion 2 is met if there is a relation between the predictor and the mediator (i.e., between emotion regulation at time 1 and changes in job satisfaction from time 1 to time 2). Changes in satisfaction from time 1 to time 2 consisted of residuals of the regression of job satisfaction at time 2 on job satisfaction at time 1. Criterion 3 is met if the mediator predicts the outcome, controlling for the predictor (i.e., changes in job satisfaction from time 1 to time 2 predict intentions to quit at time 2, controlling for emotion regulation at time 1); and criterion 4 is met if, in the same regression, the predictor does not predict the outcome (i.e., emotion regulation at time 1 does not predict intentions to quit at time 2 when controlling for changes in job satisfaction from time 1 to time 2).

Mediation of the effect of the suppression of unpleasant emotions on intentions to quit

The effect of the suppression of unpleasant emotions on intentions to quit was significant in the previously reported analysis; Criterion 1 was met. Criterion 2 was also met; the suppression of unpleasant emotions had a significant effect on the change in job satisfaction from time 1 to time 2 \((pr = -0.10, t(108) = -2.53, p < 0.05)\). A regression of intentions to quit at time 2 on all of the control variables included in previous analyses (including intentions to quit at time 1), the change in job satisfaction from time 1 to time 2, the amplification of pleasant emotions at time 1, and the suppression of unpleasant emotions at time 1, showed that criteria 3 and 4 were met. The change in job satisfaction from time 1 to time 2 had a significant effect on intentions to quit at time 2 \((pr = -1.01, t(99) = -4.11, p < 0.001\)), and the previously significant effect of the suppression of unpleasant emotions on intentions to quit was no longer significant when the change in job satisfaction was entered in the model \((pr = 0.16, t(99) = 1.57, p = 0.12\)). These analyses provide support for Hypothesis 6 that job satisfaction mediates the effect of the suppression of unpleasant emotions at time 1 on intentions to quit at time 2.

Mediation of the effect of the amplification of pleasant emotions on intentions to quit

The effect of the amplification of pleasant emotions on intentions to quit was not statistically significant \((p = 0.06)\). The data therefore do not support Hypothesis 5 that job satisfaction mediates the relation between the amplification of pleasant emotions and intentions to quit. A path from the amplification of pleasant emotions to intentions to quit may nonetheless be implied if (a) the amplification of pleasant emotions predicts job satisfaction and (b) job satisfaction predicts intentions to quit (Kenny et al., 1998). These criteria were met: the amplification of pleasant emotions had a significant effect on changes in job satisfaction from time 1 to time 2 \((pr = 0.11, t(108) = 2.16, p < 0.05\)), and changes in job satisfaction from time 1 to time 2 had a significant effect on intentions to quit at time 2 \((pr = -0.44, t(99) = 2.80, p < 0.01\)).

\(^{2}\)Both the amplification of pleasant emotion and the suppression of unpleasant emotion were predictors in this analysis.
Effects of job satisfaction and intentions to quit on emotion regulation

Following the recommendations of Zapf et al. (1996), we tested the reverse directionality hypothesis that strain predicts changes in emotion regulation from time 1 to time 2. Two hierarchical regression analyses were conducted to examine the effects of job satisfaction at time 1 and intentions to quit at time 1 on emotion regulation at time 2. The amplification of pleasant emotions at time 2 was the dependent variable in the first analysis. Variables entered in the first and second steps were the same as in previously described analyses. Job satisfaction at time 1 and intentions to quit at time 1 were added in the third step. This analysis was repeated for the suppression of unpleasant emotions. Neither job satisfaction at time 1 \((pr = 0.07)\) nor intentions to quit at time 1 \((pr = -0.01)\) predicted the amplification of pleasant emotions at time 2, \(F(2, 99) = 0.07,\) n.s. Also, neither job satisfaction at time 1 \((pr = -0.20)\) nor intentions to quit at time 1 \((pr = -0.05)\) predicted the suppression of unpleasant emotions at time 2, \(F(2, 99) = 1.07,\) n.s.

Discussion

The goal of the present study was to enhance our understanding of how emotion regulation is associated with job satisfaction and intentions to quit. Emotion regulation, job satisfaction, and intentions to quit were measured at two time points, and variables that could produce spurious associations were controlled for to rule out alternative interpretations of the findings. The results shed light on (a) the direction of effects between emotion regulation, job satisfaction, and intentions to quit and (b) the mechanisms that possibly underlie these effects.

Longitudinal analyses revealed that emotion regulation influences both job satisfaction and intentions to quit, but no support was obtained for the reverse. The amplification of pleasant emotions increased job satisfaction. The effect of the amplification of pleasant emotions on intentions to quit was in the expected direction but it was not significant. Even so, there was evidence of a path from the amplification of pleasant emotions to intentions to quit through job satisfaction. The suppression of unpleasant emotions decreased job satisfaction, which in turn increased intentions to quit. These findings increase our confidence that emotion regulation causes changes in work experiences and pose challenges to the possibility that job satisfaction and intentions to quit change the frequency of workers’ emotion regulation.

The differential effects of the two types of emotion regulation on strain suggest that emotion regulation does not always represent a negative experience for workers. Our finding that the suppression of unpleasant emotions lowers job satisfaction and increases intentions to quit is consistent with the emotional dissonance approach. Findings concerning the amplification of pleasant emotions, however, suggest that the emotional dissonance model does not capture all of the ways in which emotion regulation impacts work outcomes. The role mechanism of emotional dissonance cannot explain why amplifying displays of pleasant emotions increases job satisfaction. Expanding the set of conceptual mechanisms by which emotion regulation exerts its impact is required to explain this finding.

Our findings do not prove the occurrence of a specific mechanism underlying the impact of the amplification of pleasant emotions on job satisfaction. Even so, the finding is consistent with the possibility that amplifying pleasant emotions increases job satisfaction by improving the quality of social interactions. As previously discussed, emotions mediate social interaction (Morris & Keltner, 2000; Rafaeli & Sutton, 1989). Past research shows that individuals respond favorably to others’ displays of pleasant emotions (Clark et al., 1996; Harker & Keltner, 2001; Pugh, 2001). It is thus likely that our participants who amplified their displays of pleasant emotions elicited favorable responses from
their supervisors, co-workers, and customers, which in turn heightened their own job satisfaction. The present research did not specifically assess the quality of our participants’ relationships with other people, and therefore alternative explanations of the impact of the amplification of pleasant emotions on job satisfaction cannot be ruled out. Future research will provide more detail on the exact mechanisms by which the amplification of pleasant emotions impacts job satisfaction.3

**Applied implications**

The findings of the present research are of importance because they suggest that in addition to improving some organizational outcomes (Pugh, 2001; Tsai, 2001), emotion regulation influences workers’ job satisfaction and intentions to quit. First, the suppression of unpleasant emotions decreased job satisfaction, which in turn increased intentions to quit. These results suggest that employers should minimize the frequency of unpleasant emotions that employees need to suppress. Second, the amplification of pleasant emotions increased job satisfaction. Display rules that call for pleasant emotions appear to benefit both the individual and the organization. We caution, however, that our data are limited to effects of emotion regulation within the period of one month. Emotion regulation could have different outcomes over a longer time period. There also remain political and ethical issues concerning the control of employee emotions by organizations (Hochschild, 1983). At the least, we urge organizations to understand that employees’ emotion regulation constitutes work that needs to be compensated.

**Limitations and suggestions for future research**

One limitation of our study concerns the sample. Participants were college students with part-time jobs in the USA, inviting questions about the generalizability of the findings. College students might not identify with their jobs as strongly as full-time workers because they rarely plan on keeping their jobs for more than a few years. There is thus little time or incentive for students to identify strongly with their organization. Yet, Ashforth and Humphrey (1993) theorized that emotion regulation leads to more positive outcomes for employees who identify strongly with their work roles than for their counterparts. The suppression of unpleasant emotions possibly had inflated effects on job satisfaction and intentions to quit in our sample because students were presumably not very attached to their organization. It is important to replicate the findings in samples of full-time workers. Comparing the effects of emotion regulation across cultures is also an important future research endeavour. Our study is also limited because effects between emotion regulation, job satisfaction, and intentions to quit were analysed over one time lag. Notwithstanding the previously described benefits of using a four-week time lag, our conclusions are limited to this time lag. Our findings cannot discount the possibility, for example, that the amplification of pleasant emotions ceases to increase job satisfaction once it reaches a plateau. We hope that the present study marks the first step toward identifying the effects of emotion regulation over several time lags in multi-wave designs (Zapf et al., 1996).

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3 Auxiliary hierarchical regression analyses indicate that emotion regulation explains more variance in satisfaction with co-workers than the other facets of job satisfaction. The amplification of pleasant emotion at time 1 ($pr = 0.12$), $t(100) = 2.29$, $p < 0.05$, and the suppression of unpleasant emotion at time 1 ($pr = -0.20$), $t(100) = -2.99$, $p < 0.01$, were significantly related to satisfaction with co-workers at time 2. $F(2, 100) = 5.29$, $p < 0.01$. The effects of the amplification of pleasant emotions ($0.01 < |prs| < 0.10$) and the suppression of unpleasant emotions ($0.01 < |prs| < 0.17$) on the other facets of job satisfaction were all weaker. These analyses suggest that emotion regulation may have a particularly important impact on social relationships with co-workers, lending credence to a social interaction approach to the effects of emotion regulation.
Future research needs to examine in more detail the mechanisms that underlie how emotion regulation impacts job satisfaction and intentions to quit. We suggest that the suppression of unpleasant emotions exerts its impact mainly through emotional dissonance and the amplification of pleasant emotions exerts its impact mainly through social interaction. Future research could test these mechanisms more explicitly by measuring the presumed mediators. Finally, our social interaction model predicts that the amplification of pleasant emotions influences job satisfaction by enhancing interpersonal encounters. Improvements in social interactions, however, likely depend on the perceived sincerity of displays of emotion (Ashforth & Humphrey, 1993; Rafaeli & Sutton, 1989). Co-workers are unlikely to develop strong relationships with colleagues whose displays of pleasant emotions seem ‘fake,’ for example. This is because ‘honest’ and ‘fake’ displays of pleasant emotions differ (Ekman, Davidson, & Friesen, 1990), and ‘fake’ facial displays of pleasant emotions might not be interpreted as a readiness for friendly interaction. The moderating role of perceived sincerity of emotion displays on the association between emotion regulation, job satisfaction, and intentions to quit awaits further research. More generally, the findings indicate that an expansion of current conceptual mechanisms that more fully capture how emotion operates in organizational contexts is necessary to understand how emotion regulation influences job satisfaction and intentions to quit.

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Laura M. Morgan is currently an Assistant Professor at Harvard Business School. She received her PhD and MA from the University of Michigan in Organizational Psychology. She received a BA in Psychology from the University of Virginia with highest distinction, and is also a member of Phi Beta Kappa Honor Society. Laura M. Morgan has conducted extensive research that examines the experiences of underrepresented minorities in professional organizations. Specifically, she has explored professional image construction, impression management behaviors, organizational identification, and identity-based discrimination among professionals of various socio-demographic groups. At the University of Michigan, Morgan has taught undergraduate courses on organizational behavior, group

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References


