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Emotional Labor Demands and Compensating Wage Differentials

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The concept of emotional labor demands and their effects on workers has received considerable attention in recent years, with most studies concentrating on stress, burnout, satisfaction, or other affective outcomes. This study extends the literature by examining the relationship between emotional labor demands and wages at the occupational level. Theories describing the expected effects of job demands and working conditions on wages are described. Results suggest that higher levels of emotional labor demands are associated with lower wage rates for jobs low in cognitive demands and with higher wage rates for jobs high in cognitive demands. Implications of these findings are discussed.

In numerous occupational roles, such as customer service, health care, protective services, and counseling occupations, employees are continually faced with emotionally charged encounters requiring specific emotional displays. Despite the pervasiveness of emotionally laden job experiences, research has only recently begun to examine the consequences of emotions at work for workers and organizations (Brief & Weiss, 2002; Weiss & Cropanzano, 1996). One area that is witnessing increased research attention is *emotional labor*, a construct first defined by Hochschild (1983) as the "management of feeling to create a publicly observable facial and bodily display" (p. 7).

One rationale for interest in emotional labor is its pervasiveness. Numerous occupations require workers to engage in frequent emotional displays. The required emotional displays of concerned flight attendants (Hochschild, 1983), friendly convenience store clerks (Rafaeli, 1989; Sutton & Rafaeli, 1988), angry criminal investigators and bill collectors (Rafaeli & Sutton, 1991), and empathetic health care professionals (Miller, Birkholt, Scott, & Stage, 1995; Miller, Stiff, & Ellis, 1988) are examples. Research suggests that at least one third of American workers engage in emotional labor (Hochschild, 1983) and that for some workers, emotional labor is a component of two thirds of workplace communication (Mann, 1999a). The pervasiveness of emotional labor may be due, in part, to the increase in the service economy creating jobs with emotional labor demands. From an organizational perspective, employees' adherence to emotional labor demands is valuable because of the potential benefits in achieving organizational outcomes, particularly in service occupations (Grandey & Brauburger, 2002; Pugh, 2001; Tolich, 1993). From the worker's perspective, emotional labor demands have effects on relevant job and psychological outcomes such as job satisfaction, emotional exhaustion, and well-being; these effects are typically negative (Grandey, 2000; Hochschild, 1983; Morris & Feldman, 1996; Pugliesi, 1999; Wharton, 1993).

Given the purported negative consequences, one might question why workers would accept jobs with a high demand for emotional labor. Seminal work in the field by Hochschild (1983) suggests that emotional labor is "sold for a wage and therefore has exchange value" (p. 7). However, whether jobs high in emotional labor demands actually evidence gains in the form of wages has not been explicitly examined, and the limited empirical evidence has been mixed. Adelmann's (1995) research suggests that a sample of table servers perceive that emotional labor "results in better tips." However, a study by Wharton (1993) found that employees in occupations classified as those in which emotional labor is performed have lower income than do employees in occupations in which emotional labor is not performed. Despite these wage-relevant findings, the studies described above were limited to a small number of occupations and organizations and did not control for other job characteristics related to wages. These studies were not specifically designed to test the interplay of emotional labor demands and wages. The relationship between emotional labor and wages has never been studied explicitly.

The current study aims to examine emotional labor demands as they relate to wages to determine whether the *labor* of emotional labor evidences wage returns in the form of compensating differentials. This study is unique because much of the empirical work on emotional labor has been conducted primarily at the individual employee level of analysis rather than at the occupational level. Although an individual-level emphasis is informative, given that

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emotional labor demands reside within the job rather than within the person, analysis at the occupational level is appropriate. Furthermore, Hochschild (1983) originally focused on the occupational level of analysis and included a classification of occupations based on their emotional labor demands. Hochschild identified occupations high in emotional labor in the categories of professional–technical (e.g., nurses, physicians, therapists, lawyers), clerical (e.g., cashiers, clerks, bank tellers, and bill collectors) and service workers (e.g., protective service workers, personnel service workers, health service workers, and waiters). We examine the effects of emotional labor demands while controlling for traditional factors related to wages (i.e., unemployment, unionization) that could explain significant variance in wages. We also consider how emotional labor may interact with other job features, in particular, the interaction between emotional labor demands and the cognitive demands of the job.

Emotional Labor

Following Hochschild's (1983) seminal piece in which she coined the term "emotion labor," several conceptualizations of emotional labor have been proposed (Ashforth & Humphrey, 1993; Brotheridge & Lee, 1998; Glomb & Tews, 2004; Grandey, 2000; Mann, 1999b; Morris & Feldman, 1996). Some conceptual ambiguity persists, but each conceptualization has in common the general underlying assumption that emotional labor involves managing emotions so that they are consistent with organizational or occupational *display rules* regardless of whether they are discrepant with internal feelings (see Grandey, 2000, for a recent overview); *emotional labor* is "the act of displaying appropriate emotion (i.e., conforming with a display rule)" (Ashforth & Humphrey, 1993, p. 90).

These display rules and the emotional labor they solicit are present in a number of occupations and generate emotional labor demands. For example, service personnel are typically required to display positive emotions (e.g., enthusiasm, happiness), to promote goodwill, patronage, and spending while keeping to themselves their negative feelings (Diefendorff & Richard, 2003; Grandey, 2000; Grandey & Brauburger, 2002; Hochschild, 1983; Rafaeli & Sutton, 1987); police interrogators and bill collectors are often required to display negative emotions (e.g., irritation, aggravation) to gain compliance from debtors and suspects (Stenross & Kleinman, 1989; Sutton, 1991). The emotional labor demands present in these and many occupations are of interest. Our interest is primarily in *job-focused* emotional labor (Brotheridge & Grandey, 2002), which "denotes the level of emotional demands in an occupation" (p. 18), as opposed to *employee-focused* emotional labor, which "denotes employee process or experience of managing emotions and expressions to meet work demands" (p. 18).

In jobs with high emotional labor demands, the emotions displayed by an employee may be inconsistent with their internal emotional state, creating *emotional dissonance*, the conflict between genuinely felt and expressed emotions. Similar to cognitive dissonance, emotional dissonance creates an unstable state within the individual and may lead to such negative outcomes as estrangement between oneself and one's true feelings (Hochschild, 1983), job-related stress (Adelmann, 1995; Pugliesi, 1999; Wharton, 1993), job dissatisfaction, emotional exhaustion, and organizational withdrawal (Grandey, 2000; Hochschild, 1983; Morris & Feldman, 1996, 1997; Wharton, 1993). Much of the research on the outcomes of emotional labor has centered on these negative attitudinal, psychological, and behavioral outcomes for employees. There has not been attention to whether emotional labor demands contribute in any meaningful way to the pecuniary outcomes for employees engaged in emotionally laborious jobs. Using the literature on compensating wage differentials, we posit a rationale for a compensating wage differential of emotional labor demands.

Emotional Labor Demands as Compensating Wage Differentials

As first proposed by Adam Smith (1776) in *The Wealth of Nations*, the theory of compensating wage differentials suggests that wages vary across jobs to offset nonpecuniary advantages and disadvantages of job characteristics. Thus, the theory provides a possible explanation of wage differences across jobs. Jobs differ in terms of such characteristics as educational requirements, job stress, working hours, physical effort, and level of risk. Workers selecting jobs consider these characteristics in addition to the pecuniary characteristics (i.e., wages and benefits). If two occupations have largely equivalent job characteristics and equivalent wages except that, for example, one job requires greater physical effort, employees will migrate to the job with lower physical demands. As migration occurs to the less demanding job, wages in the less demanding job will fall and wages in the more demanding job will rise until a wage differential exists that is large enough to compensate for this difference in physical demands. The compensating wage differential is the amount that an employee must be compensated to accept the additional work effort for the occupation. Ceteris paribus, absent such a wage premium paid to the job with greater demands, employees would migrate to the job with lower physical demands. Consistent with this theory, evidence supports the compensating wage differential theory for physical risks (e.g., Olson, 1981; Smith, 1979).

Emotional labor as a job demand. Jobs with high emotional labor demands may require a compensating wage differential in the same way that wage premiums are accorded to jobs associated with high physical labor demands. Brotheridge and Grandey's (2002) notion of job-focused emotional labor captures the level of emotional demands in an occupation. Employees in jobs with high emotional labor demands may experience emotional dissonance (Hochschild, 1983). As discussed above, emotional dissonance creates an unstable state within the individual and may lead to negative job and psychological outcomes. Given that a job high in emotional labor is associated with elevated risk for such negative employee outcomes as psychological stress, burnout, and job dissatisfaction, a wage premium may be expected.[1]

Emotional labor skills as human capital. In addition to job attributes, compensating wage differentials may also be recognized

[1] Although many have argued that emotional labor leads to negative employee outcomes, some have suggested otherwise. Maslach (1978) has argued that faking certain emotions may allow individuals to psychologically distance themselves from potentially stressful encounters. Alternatively, cognitive consistency arguments suggest that faking positive emotions may result in individuals believing themselves to be in a good mood, thus alleviating an uncomfortable dissonant state (e.g., "I'm acting happy; therefore, I must be"). Alternatively, expressing positive emotions may lead to physiological changes (Zajonc, 1985) and consequent positive affect states.

in the form of returns to human capital.[2] The central premise of human capital theory is that a worker's skills, abilities, and characteristics represent the worker's capital that is paid for or "rented" by the employer; greater human capital results in greater returns in the form of wages (Haider, 2001; Loewenstein & Spletzer, 1998). Most of the literature on wage returns to human capital examines the effects of general and firm-specific training and education activities on the basis of the original premise that human capital is the result of a monetary investment one makes in him- or herself (Becker, 1964). However, in recent years human capital has been conceptualized more broadly to include a wide array of worker attributes and competencies that contribute to organizational performance, including cognitive abilities and creativity (e.g., Snell, Lepak, & Youndt, 1999). There are positive returns to cognitive ability holding education constant (Cawley, Conneely, Heckman, & Vytlacil, 1997), providing evidence that even human capital not developed through investment may receive returns. Although emotional labor is not specifically mentioned in the context of human capital, Lepak and Snell (1999) noted that human capital includes employees' ability to provide service to customers, suggesting a concept that may be related to the ability to engage effectively in emotional labor.

Similar to how demands for specific technological skills are rewarded with higher wages, demands for ability and skill in emotional labor may result in higher wages. Occupations that require these abilities and skills of employees may have higher wages because these skills and abilities are considered human capital and are compensated accordingly. Research has suggested that certain employee characteristics may result in more frequent or effective emotional labor (e.g., Grandey, 2000; Morris & Feldman, 1996; Wharton, 1993). For jobs high in emotional labor, additional skills beyond those traditionally considered in wage research (e.g., specific vocational preparation [SVP] and general educational development [GED]) may be required and compensated to meet emotional labor demands, such as interpersonal skill, emotional intelligence, emotional expressivity, self-monitoring, and conflict management. These skills have been considered increasingly important in the growing service economy, and the presence or development of these skills may facilitate meeting emotional labor demands and be a basis for higher compensation. On the basis of theories of compensating wage differentials and human capital, we propose the following hypothesis:

> *Hypothesis 1*: Greater emotional labor demands will be associated with higher wages.

Interactive Effect of Demands

Although compelling reasons supporting a wage premium for emotional labor demands exist, anecdotal evidence suggests that the types of jobs that are high in emotional labor are not necessarily or always high-paying jobs (e.g., service providers). Furthermore, research examining the levels of emotional labor required among workers in two organizations suggests lower wages for those engaging in emotional labor (Wharton, 1993). One job characteristic that may explain some of this inconsistency is the cognitive demands of a job.

Ample research suggests that the cognitive demands present in a job are among the strongest predictors of wages (e.g., Bound & Johnson, 1992; Juhn, 1999). Although a compensating wage differential approach would suggest that both cognitive and emotional labor demands have additive effects, in which higher levels of cognitive and emotional labor demands would both result in higher wages, theories of job and role demands suggest that their effects may be interactive; emotional labor demands may receive a greater wage premium in the presence of cognitive demands.

First, labor market theory suggests that employees who are able to meet both high cognitive and high emotional labor demands are more scarce in the labor market than employees who are able to meet either cognitive or emotional labor demands alone. This scarcity of individuals able to meet both types of demands would result in higher wages. One possibility for the operation of this effect suggests an additive effect, such that a wage increase resulting from cognitive demands and emotional labor demands would be equivalent to the wage increase attributed to the sum of each individual demand. However, the scarcity model might also suggest an interactive effect because the combination of the two abilities is more scarce and thus results in even higher wages than their constituent effects combined. For example, if 20% of the labor market is able to meet emotional labor demands and 20% is able to meet cognitive demands, and we assume that these are completely independent skill sets, then only 4% of the population would be able to meet both emotional labor demands and cognitive demands. Although the assumption of complete independence is arguable, unless these skill sets were perfectly correlated, having both is more rare than having one or the other. Given this increasing rarity, the scarcity explanation suggests that the wage premium afforded to emotional labor demands is greater for jobs with cognitive demands than for jobs without cognitive demands.

A wage differential effect may also be informed by the conservation of resources theory (Hobfoll, 1989, 1998), which assumes that individuals seek to acquire and maintain resources, including time and energy. The notion that humans seek to conserve or maintain their energies and that this stock of energy is used up in the course of daily activities has been examined elsewhere (Goode, 1960; Marks, 1977; Wharton & Erickson, 1995) and has been applied to the emotional labor domain to explain why emotional labor may lead to burnout (Brotheridge & Lee, 2002). Given that both cognitive demands and emotional demands tap this resource of human energy and workers seek to conserve or maintain these resources, workers may expect a wage premium for jobs that tap both cognitive and emotional capacities. An additive effect is possible such that a wage increase resulting from cognitive demands and emotional labor demands would be equivalent to the wage increase attributed to the sum of each individual demand. However, similar to the rationale for the scarcity hypotheses, the effects of simultaneous drains on these resources may be greater than the sum of the two types of resource depletion, suggesting an interactive effect. The conservation of resources theory suggests that depletion in one area of a person's psychological system is

[2] We note that the human capital explanation does not adhere to a strict definition of compensating wage differential, which would suggest that the differential applies to a feature of the job that, all else equal, would result in a wage premium. The human capital explanation assumes that all else is not equal—human capital is rewarded thereby creating wage premiums. However, given that this study is at the occupational level, human capital variables functioning within occupations may be considered a driver of a compensating wage differential, albeit more loosely defined.

often made up by having extra levels of resources in others (Hobfoll, 1989, 2002)—so people with high cognitive demands at work will be able to draw on their pool of emotional resources and vice versa. Those who have drains on both systems may not be able to engage in this type of resource replacement and thus experience even greater resource depletion and ultimately greater wages. Thus, for jobs with high cognitive demands, the addition of emotional labor demands may be rewarded because of a much greater propensity to deplete and not replenish resources when both demands are present.

The scarcity model and the conservation of resources model have commonalities as well as distinctions. Specifically, both models deal with scarce resources and both propose an interactive effect on wages such that for jobs that require simultaneous ability to meet cognitive and emotional labor demands or simultaneous drains on resources, the wage premium afforded to emotional labor demands would be greater than that for jobs without the cognitive demands. Despite these similarities, a strict scarcity model explanation concerns the scarcity of workers in the labor market with the ability to meet both emotional and cognitive demands, whereas the conservation of resources model concerns the scarcity or limited amount of resources available to employees who experience higher levels of these demands. That is, even given the ability to meet both emotional and cognitive demands, workers in occupations that have these demands may still experience depletion of resources because of these demands. For example, a nurse who has the ability to meet cognitive and emotional demands (and thus would be scarce in labor market terms) endures the daily cognitive and emotional demands of his or her occupation, which depletes emotional and physiological resources, regardless of the nurse's ability.

Warr's (1987) vitamin model can also provide insight into a possible interactive effect. The model attempts to delineate features of good jobs, noting that there are some job features that are desirable only at certain levels; too much or too little of the job features may contribute to psychological stress. Thus, this model posits nonlinear relationships between these features and psychological outcomes. Features that function in this nonlinear fashion include opportunity for control, opportunity for skill use, externally generated goals, variety, environmental clarity (e.g., transparency of feedback), and, most relevant to emotional labor demands, opportunity for interpersonal contact. The notion that additional challenge at work might be considered a positive outcome for workers is inconsistent with the traditional economic model of worker effort, which assumes that any additional effort required on the job is considered aversive by workers. In addition to job features for which certain levels are deemed appropriate, there are also features that evidence a linear relationship (e.g., money, social position, and physical security); more of these qualities is always preferred.

Extending this idea to consider a number of job features in concert, we can see how job features or demands may be beneficial, but only at certain levels; beyond these levels the presence of a feature may be detrimental. This has specific implications for emotional labor. When jobs are high in cognitive demands, the application of emotional labor demands may push workers into a range of stimulation and effort in which the job becomes stressful and unfavorable. Therefore, a compensating wage differential exists for these jobs as a way to compensate for the excessive demands. Conversely, workers with other demands that are low (i.e., low cognitive demands) are not moved into such a demanding zone by emotional labor demands and thus may not be compensated for these demands. Jobs with low cognitive demands and high emotional labor demands may maintain a level of stimulation in which characteristics such as "opportunity for interaction with others" (Warr, 1987) are not unfavorable features.

Although these three theoretical perspectives suggest distinct mechanisms, they all suggest that jobs with high cognitive demands will receive a greater wage premium than will jobs with low cognitive demands with the application of emotional labor demands. Explanations have as an underlying theme the idea that for jobs high in cognitive demands, the emotional labor requirements may be one additional component that either results in a greater scarcity of workers, a dramatic depletion of resources, or movement of job demands into an undesirable zone. We expect that jobs high in cognitive demands receive pecuniary benefits from the addition of emotional labor demands; a job that is already cognitively demanding requires additional reward with the application of emotional labor demands.

> *Hypothesis 2*: Cognitive demands and emotional labor demands will have an interactive effect on wages, such that a wage increase afforded to emotional labor demands will be greater for jobs with high cognitive demands.

Similar to the interactive effect of cognitive and emotional labor demands on wages, we expect an interactive effect with the physical demands of the job and the emotional labor demands. This effect is also consistent with the vitamin model of job demands.

> *Hypothesis 3*: Physical demands and emotional labor demands will have an interactive effect on wages, such that emotional labor demands will evidence a wage increase in jobs with high physical demands but not in jobs with low physical demands.

Control Variables

To have confidence that emotional labor demands influence wages over and above other characteristics of an occupation, we controlled for several variables that have been shown to influence wages. First, we controlled for the proportion of women in an occupation; occupations with a largely female constituency are typically paid lower wages than are male-dominated occupations. Furthermore, controlling for the proportion of women in an occupation accounts for the social structural argument that many jobs requiring emotional labor require highly nurturant social skills and that these skills have a negative return (England, 1992; Kilbourne, England, Farkas, Beron, & Weir, 1994), possibly because of the high proportion of women in them (Shepela & Viviano, 1984). Second, we controlled for the unemployment rate in the occupation. In this case, unemployment rates for the occupation as a whole were used as a short-term index of demand for individuals in a given occupation in the labor market. Higher levels of unemployment reflect an excess of individuals who identify themselves with a specific occupation relative to the demand for workers in the occupation by employers and should therefore be negatively related to wages. Third, we controlled for the proportion of unionized workers. Unionized workers are generally paid a higher wage relative to nonunion workers in the same occupations, largely

because of the advocacy role played by unions in wage negotiations (Linneman, Wachter, & Carter, 1990). Fourth, we controlled for the squared terms for job demands and interactive terms for cognitive and physical demands to ensure that our analyses were not picking up spurious results for emotional labor demand interactions that were actually due to either cognitive or physical factors not accounted for in the linear main effects.

Method

The data for this study were collected at the occupation level from four large-scale government databases (described below). Occupational-level data are consistent with Hochschild's (1983) seminal research on emotional labor, which classifies occupations on the basis of their emotional labor demands, and are consistent with conceptualizations of job characteristics and demands, which are traditionally understood at the occupational level (Harvey, 1991). All measures and results described below pertain to occupations as a whole and should not be interpreted as individual-level variables or effects.

Four large-scale government databases provided occupation-level data: the Occupational Network (O*NET; United States Department of Labor/Employment and Training Administration, 2001), the Dictionary of Occupational Titles (DOT; United States Department of Labor/Employment and Training Administration, 1991), the Occupational Employment Statistics survey (OES; United States Bureau of Labor Statistics, 2001), and the Current Population Survey (CPS; United States Census Bureau, 1998, 1999, 2000, 2001). Because of the development of the Standard Occupational Classification system, it is possible to combine information across these databases by translating codes from one occupational classification method to another. Using these Standard Occupational Classification codes to link the databases, we identified a total of 560 occupations that could be matched across all databases. There were a small number of cases for which the O*NET divided a single job into two subcategories to represent the distinction between public and private sector jobs. In these cases, the average of the job characteristics scores was taken for the two subdivided jobs.

Job Demands

To assess job demands, specifically emotional labor demands, cognitive demands, and physical demands, we relied primarily on job characteristics information available on O*NET 3.1 (Peterson et al., 2001), a comprehensive system that uses a common language of descriptors to describe occupations and characterize different jobs in general terms, making comparisons between occupations possible. Previous research investigating occupational characteristics as predictors of wage rates has used similar data collection instruments such as the DOT (Kilbourne et al., 1994) or the Canadian Classification and Dictionary of Occupations (Kumar & Coates, 1982).

Use of the O*NET is particularly important to assess emotional labor demands. Although there have been attempts to categorize occupations as high or low in emotional labor demands (Hochschild, 1983; Wharton, 1993), there is no comprehensive categorization scheme that provides discrimination among occupations beyond dichotomous or trichotomous classification. Indeed, the use of new methods for the identification of emotional labor at the occupational level has been encouraged by researchers seeking an alternative to dichotomous classification schemes (Wharton, 1993). O*NET allows for identification of emotional labor demands in occupations on the basis of the job characteristics information provided. Analogous to the assumption that employees in jobs with high physical demands or high cognitive demands are likely to engage in physical work or cognitive work, we assume that employees in jobs with high emotional labor demands are likely to engage in "emotion work."

One set of job characteristics included in the O*NET is generalized work activities, which represent activities or behaviors that underlie the accomplishment of major work functions (Jeanneret, Borman, Kubisiak, & Hanson, 1999). Unlike traditional task-oriented job analytic approaches that describe job content in terms of tasks, generalized work activities use behaviors performed by the worker to describe job content. For example, in describing the job of a nurse, the task-oriented approach would produce statements such as "performs physical examinations; conducts laboratory tests," whereas generalized work activities emphasize behaviors such as "processes information, thinks creatively." Such behavioral statements are more generalizable and can be more readily compared across a variety of job types.

The O*NET uses 42 generalized work activities. The O*NET models the structure of work as a series of worker inputs (e.g., looking for, receiving, identifying, and evaluating job-related information), worker processes (e.g., the mental processes involved in interpreting the information, such as information or data processing, reasoning or decision making), worker outputs (e.g., the actions of workers in response to information such as performing physical, manual, complex, or technical activities), and interpersonal interactions with others (e.g., communicating, coordinating, developing, managing, or advising; Jeanneret et al., 1999). The O*NET's 42 generalized work activities describe the activities of workers during each of these steps (e.g., information input, processing, output, interaction) and jobs are evaluated or rated for each generalized work activity. Therefore, generalized work activities present useful information for understanding job characteristics that may relate to wages, as they encompass several job-relevant behaviors. From these generalized work activities, we sought to extract emotional labor demands, cognitive demands, and physical demands.

An initial examination of the factor structure underlying the generalized work activities for a small sample of jobs ($k = 35$) produced a three-factor solution (Jeanneret et al., 1999). However, we believe that several generalized work activities have a conceptual overlap with emotional labor demands, which should be distinct from the three factors found in previous research. The presence of a fourth factor representing emotional labor demands is likely to be more clearly detectable in the current O*NET data, which include a much larger number of jobs ($k = 560$).

We submitted the correlation matrix for ratings of the generalized work activities items from the O*NET for the 560 occupations in this study to a principal components analysis with direct oblimin (oblique) rotation to demonstrate that an emotional labor factor can be identified. A principal components extraction was used to reflect the fact that observed variables can be combined to form a latent aggregate score, as opposed to the principal-axis or maximum-likelihood factor extraction, which describes how observed variables are caused by a latent factor. From these generalized work activities we extracted four factors representing information, managing, physical, and emotional labor. Our principal components analysis supported a four-component solution with components comparable to those found by Jeanneret et al. (1999), including working with data and information (i.e., information), working with and directing others (i.e., managing), and manual and physical activities (i.e., physical), as well as an emotional labor demands component. The three-factor solution explains 69.6% of the variance in the items; the four-factor solution explains 73.3% of the variance in the items. Although this is a modest increase in proportion of variance accounted for, the pattern of loadings for the four-component solution suggests that the emotional labor component is in fact distinct from the components found in previous research.

Emotional labor demands. The six generalized work activities items that have conceptual overlap with emotional labor demands are as follows: establishing and maintaining relationships, assisting and caring for others, selling or influencing others, resolving conflicts and negotiating with others, performing for/working with the public, and communicating with persons outside the organization. All of the six items that we believe reflect emotional labor had component loadings of greater than .35 on the Emotional Labor factor. However, four of the six items (establishing relationships, selling or influencing others, resolving conflicts, and communicating

with others) had strong cross-loadings with the managing or information dimension.

To ensure that we obtained a pure measure of emotional labor independent of managerial activities, only two generalized work activities (assisting and caring for others and performing for or working with the public) that loaded almost exclusively on a distinct emotional labor demands component were used to avoid conceptual overlap with the managerial aspects of work. However, using only two items to represent emotional labor demands was less than satisfactory. To supplement our emotional labor demands measure, we used items from the 59 work context items of the O*NET, which are scored on 5-point scales indicating the frequency or relevance of work context features. For example, raters indicate "how frequently do the job requirements place the worker in conflict situations" on a scale ranging from 1 = *never* to 5 = *every day*. Work context items are similar to the generalized work activities items in that they fall under the broader category of occupational requirements, which "represent descriptors of the work itself, as compared to descriptors of the worker" (Peterson et al., 2001, p. 467).

In selecting items from the work context scale, we examined only those items from the interpersonal relationships subcategory. Next, we identified items that (a) would supplement the existing emotional labor demands items and (b) would not be likely to cross-load on the managing factor (e.g., supervise, coach, and train others). Four items of the O*NET work context scales that are representative of dimensions of emotional labor demands are not represented in the list of generalized work activities variables: providing a service to others, deal with external customers, frequency in conflict situations, and deal with angry/unpleasant people. In addition to enriching the emotional labor demands measure, the inclusion of these items ensures that negative emotional displays are also captured in the emotional labor construct. The results of the final principal components analysis with the generalized work activities and four work context items are presented in Table 1.

As shown in Table 1, the four-factor solution suggests information, managing, physical labor, and emotional labor components of job demands. The emotional labor demands composite was created using those work activities items (two items) and work context items (four items) that load almost exclusively on the emotional labor demands component; none of the items that cross-loaded were included so as to allow for a more pure assessment of emotional labor demands. On the basis of the principal components analysis, a scale for emotional labor demands (and the other demands discussed below) was computed by standardizing within each scale and then summing these standardized scores. The emotional labor component correlated with the information component ($r = .14$), the managing component ($r = -.42$), and the physical component ($r = -.38$).

We note that our operationalization is consistent with emotional labor conceptualizations that have always had "interactions with others" at their core—an idea that is well represented in our items. A focus on interaction is consistent with Morris and Feldman's (1996) research arguing that frequency of interaction is the central component of emotional labor and with Hochschild's (1983) original work identifying jobs that "require face-to-face or voice-to-voice contact with the public" (p. 147). Operationalizations of emotional labor have also emphasized the frequency of interactions with others (e.g., "My job requires that I work with customers on a regular basis"; Morris & Feldman, 1996).

Cognitive demands. We included several indicators of cognitive demand. First, the information and managing factors from the factor analysis (discussed above in the *Job Demands* section) were used as indicators of the cognitive demands of the job; the correlation between scales developed from these items was .74. (The item "inspecting equipment, structures, or material" was eliminated because of its cross-loading on the information and physical dimensions.) Second, SVP and GED requirements were collected from the DOT database. These data contain more specific information regarding the nature of training as well as a greater level of detail for SVP and are the basis for the job zones (categorical descriptions of the vocational preparation required for a job) featured in the new O*NET system. The GED requirements are collected in the areas of language, reasoning, and mathematics. Because of the very high correlations among these job demands, SVP, and GED requirements indicators (average $r = .89$), we computed an aggregated cognitive demands index by standardizing within each scale and then summing these standardized scores (for a similar composite approach, see Kilbourne et al., 1994).[3]

Physical demands. A physical demands scale was computed to reflect the demands placed on the worker for manual labor as well as the physically demanding risks and unpleasant conditions of the job, such as working with heat, loud noises, and dangerous working conditions. A physical demands scale was formed consisting of those items that loaded most strongly on the physical–manual labor component in the principal components analysis of the generalized work activities, whereas the risks and unpleasant conditions of the job were measured using items from the work context scales of the O*NET database. In selecting items from the work context scale, we used only those from the physical work conditions category that reflect the occupation's exposure to noise, heat, light, contaminants, cramped spaces, vibrations, and hazardous conditions, situations, and equipment; these conditions would be compensated according to the theory of compensating wage differentials. Because the scales representing manual labor from the generalized work activities and physically demanding conditions from the work context scale were highly correlated ($r = .77$), a summary score was computed using all of the individual items.

Control Variables

Information on the proportion of women in an occupation was computed by aggregating individual employee-level data on gender to the occupation level using data from the CPS over a 4-year period from 1998–2001. The CPS is a monthly survey of over 50,000 households conducted by the United States Census Bureau. Data on occupation and employment are collected every March in a special supplemental survey. The March data for the 4-year time period resulted in a total of 265,225 respondents. Responses from these individuals are used to represent the working population of the United States. The CPS data were also used to create an index of labor market demand (the occupational unemployment rate) for the occupations under investigation. The proportion of unemployed individuals in an occupation was computed for each occupation by aggregating individual-level data to the occupational level. The proportion of unionized workers for an occupation was computed by aggregating individual employee-level data to the occupational level. In our final sample of occupations, the mean percentage of women was 49.94%, the mean percentage of unemployed workers was 4.84%, and the mean percentage of unionized workers in an occupation was 13.15%. These numbers are very similar to the proportions of these attributes across all jobs provided in other census data.

Wages

Information on wages was collected from the annual OES survey. This large-scale survey of employer payrolls is the most accurate information available regarding occupation-level wage rates available in the United States. The OES survey is an annual mail survey measuring occupational employment and wage rates for both wage and salaried workers. The United States Bureau of Labor Statistics reports that the OES survey contacts approximately 400,000 establishments each year. In the year 2000, the response rate was 78% of surveyed organizations. The survey excludes the self-employed, owners and partners of unincorporated firms, and unpaid family workers. Wages for the OES survey are straight-time, gross

[3] Because of the mixture of item types in the cognitive demands index, we conducted analyses excluding GED and SVP from the index. Results were highly consistent except for some small changes in the effect size for cognitive demands; the interaction plots were extremely similar.

Table 1
Results of the Principal Components Analysis of Job Demand Characteristics

Activity	Information	Managing	Emotional	Physical
Updating & using job-relevant knowledge	**.91**	.00	.09	−.07
GED mathematics	**.83**	.00	.00	−.18
Analyzing data or information	**.82**	.11	.07	−.16
Monitor processes, material surroundings	**.80**	.08	.08	.28
Identifying objects, actions, and events	**.80**	.11	.09	−.15
Getting information needed to do the job	**.79**	.13	.15	−.14
Implementing ideas, programs, etc.	**.77**	.25	−.07	.05
Making decisions and solving problems	**.76**	.24	.12	−.06
Processing information	**.76**	.10	.01	−.32
GED reasoning	**.76**	.09	.06	−.21
Interpreting meaning of information to others	**.74**	.09	.24	−.19
GED language	**.73**	.05	.16	−.28
Evaluating information against standards	**.73**	.18	−.02	−.16
Estimating needed characteristics	**.72**	.28	.00	.04
Drafting & specifying technical devices, etc.	**.69**	−.01	−.23	.13
Judging qualities of things, services, people	**.68**	.24	.11	−.11
Specific vocational preparation	**.68**	.18	−.06	−.03
Interacting with computers	**.67**	.02	−.05	−.37
Documenting–recording information	**.67**	.10	.16	−.26
Provide consultation & advice to others	**.62**	.31	.20	−.13
Thinking creatively	**.61**	.28	.02	−.10
Communicating with other workers	**.58**	.38	.14	−.10
Inspecting equipment, structures, material	**.57**	−.01	−.23	**.49**
Organizing, planning, and prioritizing	**.54**	**.46**	.10	−.07
Repairing & maintaining electrical equipment	**.53**	−.31	−.05	.25
Developing objectives and strategies	**.51**	**.49**	.10	−.08
Communicating with persons outside organization	**.41**	.16	**.57**	−.18
Staffing organizational units	−.13	**.99**	−.14	−.01
Guiding, directing, & motivating subordinates	.14	**.91**	−.10	.08
Developing and building teams	.16	**.88**	.00	.10
Coordinating work & activities of others	.24	**.79**	.05	.12
Coaching and developing others	.14	**.78**	.10	.04
Monitoring and controlling resources	.06	**.78**	.07	−.07
Scheduling work and activities	.19	**.74**	.16	.00
Resolving conflict, negotiating with others	.02	**.63**	.38	−.06
Performing administrative activities	.20	**.57**	.14	−.25
Teaching others	.30	**.52**	.22	.00
Establishing & maintaining relationships	.18	**.40**	**.56**	−.08
Selling or influencing others	.17	**.38**	**.47**	−.08
Performing for–working with public	.00	.03	**.84**	−.08
Assisting and caring for others	.11	−.05	**.77**	.05
Deal with external customers (WC)	−.03	−.03	**.92**	−.06
Deal with unpleasant–angry people (WC)	−.06	.03	**.90**	.05
Provide a service to others (WC)	−.06	−.12	**.89**	−.02
Frequency in conflict situations (WC)	.11	.24	**.70**	.11
Extremely bright or inadequate lighting (WC)	−.01	.02	.08	**.85**
Very hot (WC)	−.12	.05	−.01	**.83**
Cramped work space, awkward positions (WC)	.02	−.13	−.02	**.79**
Sounds, noise levels are distracting, etc. (WC)	−.13	.05	−.18	**.77**
Performing general physical activities	−.24	.01	.11	**.75**
Contaminants (WC)	−.05	−.01	−.18	**.72**
Hazardous conditions (WC)	.22	−.11	−.16	**.69**
Whole body vibration (WC)	−.09	.06	−.08	**.69**
Operating vehicles or equipment	−.13	.03	−.30	**.69**
Hazardous situations (WC)	−.14	−.02	−.15	**.66**
Hazardous equipment (WC)	−.07	−.03	−.34	**.66**
High places (WC)	.05	.01	.04	**.63**
Repairing & maintaining mechanical equipment	.10	−.09	−.21	**.61**
Controlling machines and processes	.11	−.10	**−.42**	**.46**
Handling and moving objects	−.24	−.14	−.24	**.42**
% variance attributed to rotated component	16.78	19.32	12.86	14.20

Note. Loadings above .40 are shown in bold. Work context items are designated by (WC). Cross-loading items were eliminated from composites except for those that cross-loaded on the Information and Managing factors, which were ultimately combined for the cognitive demands index. GED = general educational development.

pay, exclusive of premium pay. Base rate, hazardous-duty pay, incentive pay (including commissions and production bonuses), tips, and on-call pay are included, whereas back pay, jury duty pay, overtime pay, severance pay, shift differentials, nonproduction bonuses, employer cost of supplementary benefits, and tuition reimbursements are excluded. The median hourly wage rate for each occupation was used in the current study to avoid the potential for outlying wages to inflate means in some occupations. Hourly wages were used as opposed to annual wages to avoid problems in estimating expected wage rates for occupations with a high proportion of part-time workers.

Results

It was noted earlier that previous studies typically have not conceptualized emotional labor demands on a continuous scale at the occupational level. To support the operationalization of emotional labor demands used in the current study, we examined the occupations high and low in emotional labor. Table 2 provides a list of the 15 jobs highest in emotional labor demands according to our operationalization. Consistent with the list of occupations provided by Hochschild (1983), occupations high in emotional labor demands are frequently found in protective services, health care, or counseling. The 15 jobs identified by our analysis all have some degree of overlap with the occupations identified by Hochschild, although the occupational titles are somewhat different (e.g., therapists vs. psychiatrists). One departure found in the listing developed here was the low number of customer service jobs compared with Hochschild's listing. Although these direct service jobs were not in the top 15 jobs for emotional labor content, service jobs such as telemarketers, sales representatives, and retail salespersons were all over 1.5 standard deviations above the mean on the emotional labor demands scale developed for this article. The occupations deemed high in emotional labor demands provide convergent validation evidence for the current measure.

Table 3 displays the bivariate correlations among study variables. At the occupational level, higher wages were associated with lower representation of women in the occupation, lower unemployment rates, and greater proportion of unionized workers. With regard to the job characteristics variables, the linear effect for adverse physical demands was weakly related to wages ($r = -.13$) when other factors were not held statistically constant; however, the squared term was positively related to wages, suggesting that at more extreme levels, physical demands are compensated. The cognitive demands factor showed a strong univariate relationship with wages ($r = .78$). In general, these relationships are consistent with those found in the relevant literature. The bivariate correlation between emotional labor demands and wages suggests a nonsignificant relationship ($r = -.02$).

Table 2
Top 15 Occupations in Emotional Labor Demands

Ranking	Occupational title
1	Police and sheriff's patrol officers
2	Child, family, and school social workers
3	Psychiatrists
4	First-line supervisors–managers of police and detectives
5	Registered nurses
6	Transportation attendants, except flight attendants and baggage porters
7	Lodging managers
8	Pediatricians, general
9	Family and general practitioners
10	Internists, general
11	Ambulance drivers and attendants, except emergency medical technicians
12	Lawyers
13	Correctional officers and jailers
14	Police, fire, and ambulance dispatchers
15	Bill and account collectors

Table 4 shows the results from a weighted least squares regression of log hourly wages on the control variables and job characteristics. In addition to the main and interaction effects, we included squared terms for the job demands in the model. Interaction effects are sometimes significant because of the omission of higher order terms (Cortina, 1993; Edwards, 2001). To guard against this possibility, we ran our analysis with squared terms for all of the job demand predictors in the model. Furthermore, these squared terms are consistent with the vitamin model (Warr, 1987) of job demands, which suggests nonlinear relationships between some job demands and outcomes. All scale scores were standardized prior to analysis. Because the dependent variable was the natural log of wages, the coefficients can be interpreted as proportional change in expected wages given a 1 standard deviation shift in the independent variables. For example, a 1 standard deviation increase in the cognitive demands factor was associated with approximately a 32% increase in expected wages.

Because data on wages are grouped by the number of individuals surveyed, the number of individuals in an occupation reported in the OES data was used as a weighting variable for all analyses. In our case, the weight was the square root of the sample size, which is an unbiased weight for grouped data from a grouped sample such as ours (Kish, 1965). Estimates that are derived from grouped data should be given more weight to reflect the increased reliability of these estimators and has been common practice for dealing with grouped data. In other words, occupations with larger numbers of individuals have more accurately estimated median wages. The weighting procedure is essentially identical to the use of empirical Bayes weights in hierarchical linear modeling (Bryk & Raudenbush, 1992) or the use of weighted least squares in moderator detection in meta-analysis (Steel & Kammeyer-Mueller, 2001), both of which put more weight on data drawn from large samples in forming linear models. Failure to appropriately weight these grouped data can lead to biased parameter estimates and incorrect standard errors. In the regression analysis, this weighting further helps to prevent heteroscedasticity due to greater variance in occupational wage estimates for smaller sample estimates of wages (Greene, 2000).

To demonstrate the relative contribution of each predictor in explaining wages, relative importance weights are presented (Johnson, 2000). In essence, this procedure divides the model R^2 among the predictors in a manner similar to dominance analysis (Budescu, 1993); each predictor receives a percentage importance weight dependent on the percentage of its contribution to explaining the R^2. Relative importance weights were derived by regressing log median hourly wages on a set of orthogonal components generated from the set of predictor variables and then distributing the variance explained by each of these components back to the original predictors on the basis of the correlation between the original predictors and the orthogonal components. The results from this analysis are helpful for demonstrating how much vari-

Table 3
Means, Standard Deviations, and Bivariate Correlations for Study Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Log hourly median wage	2.53	0.46	—												
2. Proportion female	49.94	29.58	−.29	—											
3. Proportion unemployed	4.84	3.09	.12	−.36	—										
4. Proportion unionized	13.15	12.23	−.59	−.16	−.10	—									
5. Physical demands	0.00	1.00	−.13	−.65	.47	−.38	(.94)								
6. Cognitive demands	0.00	1.00	.78	.01	−.19	−.63	−.37	(.99)							
7. Emotional labor demands	0.00	1.00	−.02	.49	−.27	−.28	−.48	.30	(.92)						
8. Physical squared	0.46	0.48	.28	−.28	.24	−.02	.28	.03	−.27	(.88)					
9. Cognitive squared	0.62	0.76	.45	−.18	−.05	−.09	−.08	.45	−.09	.01	(.98)				
10. Emotional labor squared	0.81	0.78	−.07	.18	.00	−.01	−.01	.01	.52	−.17	−.04	(.85)			
11. Cognitive × Physical	−0.31	0.47	−.44	.42	−.08	−.02	−.20	−.33	.29	−.41	−.53	.15	(.93)		
12. Emotional Labor × Physical	−0.17	0.51	−.03	.11	.00	−.14	.01	.08	.01	−.37	−.03	−.15	.27	(.86)	
13. Emotional Labor × Cognitive	0.15	0.68	.43	−.22	.16	−.07	.19	.30	−.26	.15	.45	.19	−.51	−.11	(.91)

Note. $N = 560$. Correlations greater than .09 are significant at $p < .05$. Coefficient alphas are displayed on the diagonal in parentheses. For the reliabilities of the squared terms and interactions, the product of the reliabilities that make up the interaction was used as a lower bound estimate (Busemeyer & Jones, 1983).

ance in wages can be attributed to each of the predictors without the arbitrary order of entry that follows when change in R^2 is used to assess the utility of higher order and interaction terms.

Overall model test statistics demonstrate that a very large proportion of variance in hourly wages is explained by the independent variables ($R^2 = .812$). The results for the control variables show that wages were negatively related to the proportion of women in the occupation. Unemployment rates were also negatively related to wages with increased occupational unemployment being associated with decreased expected wages among those who have jobs. Occupations with greater proportions of unionized workers evidenced higher wages. These results are consistent with previous theory and research and suggest that the control variables are functioning as expected.

With respect to job demands and characteristics, physical demands were negatively associated with wages when other factors were held constant, which seems counter to research showing that physical demands produce a compensating differential. However, the squared term was significant, suggesting that there is a compensating wage differential primarily for jobs that are very high in physical demands—jobs with low or average levels of physical demands do not evidence as steep a wage differential.

There is a strong positive relationship between the cognitive demands factor and wages, which is consistent with human capital theory. Indeed, cognitive demands account for the largest percentage of variance in wages. The squared term for cognitive demands was not significant.

Table 4
Results of WLS Regression Analyses of Occupational Log Hourly Wages

Variable	Unstandardized coefficients	% importance weight	Unstandardized coefficients	95% confidence interval	% importance weight
Control variables					
% female	−.004**	9.84	−.005**	−.006, −.004	7.23
% unemployed	−.025**	23.65	−.027**	−.036, −.019	21.33
% unionized	.006**	2.81	.004**	.002, .006	2.06
Job characteristics					
Physical demands	−.065**	4.11	−.089**	−.117, −.060	3.97
Cognitive demands	.326**	56.59	.278**	.247, .308	37.02
Emotional labor demands	−.078**	3.01	−.057**	−.086, −.027	2.32
Squared terms					
Physical squared			.154**	.109, .199	4.79
Cognitive squared			.026	−.003, .055	7.64
Emotional labor squared			.024	−.008, .056	.37
Interactions					
Emotional Labor × Physical			.031	−.019, .080	5.01
Cognitive × Physical			.010	−.034, .054	0.55
Emotional Labor × Cognitive			.085**	.049, .122	7.73
Model R^2	.777**		.812**		
ΔR^2			.035**		

Note. $N = 560$ occupations. All job characteristics variables were standardized prior to analysis. WLS = weighted least squares.
** $p < .01$.

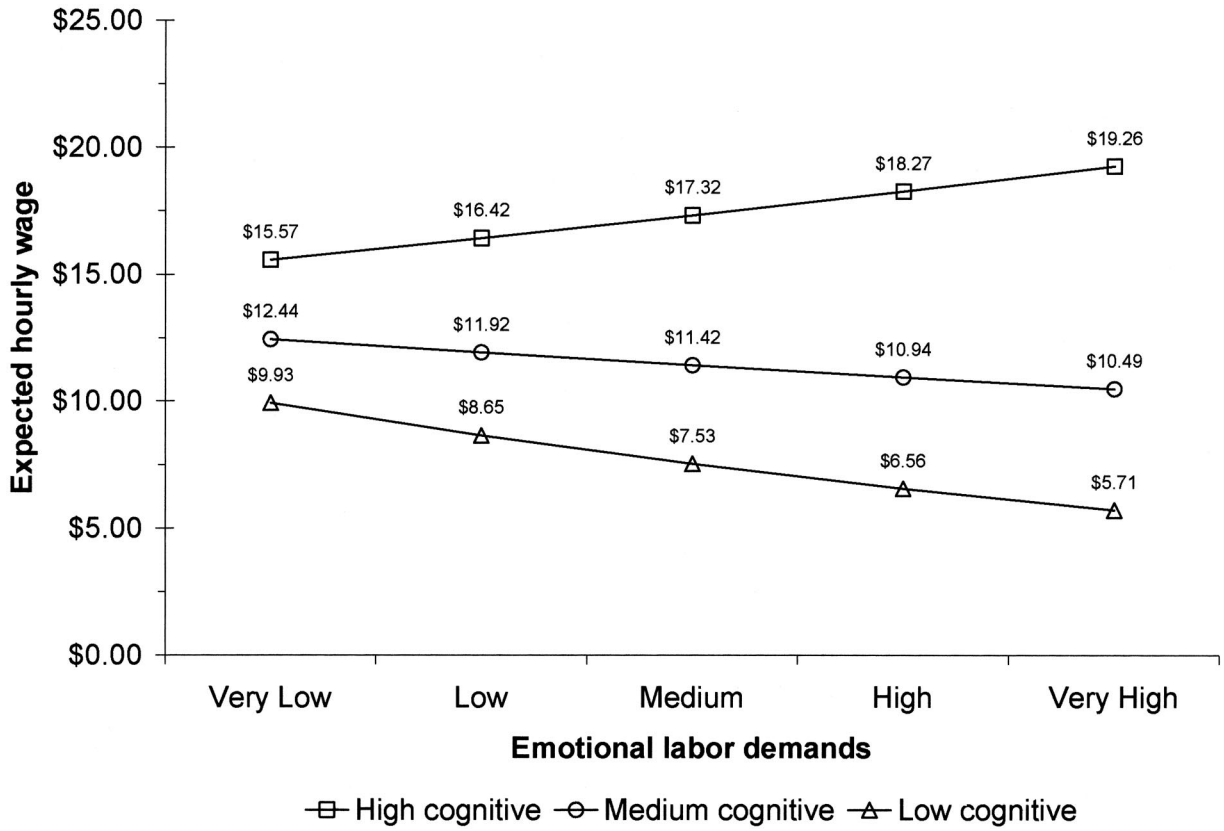

Figure 1. Plot of emotional labor demands and cognitive demands interaction.

Of particular interest, higher levels of emotional labor were associated with lower expected wages, counter to Hypothesis 1. A 1 standard deviation increase in emotional labor led to a 6% decrease in expected hourly wages. The squared term for emotional labor demands was not significant.

The relationship between emotional labor and wages becomes more complex as we examine the significant interaction between emotional labor demands and cognitive demands. The interactions between emotional labor demands and physical demands were not significant, which is inconsistent with Hypothesis 3.[4]

The significant interaction between emotional labor demands and cognitive demands is presented graphically in Figure 1.[5] For this figure, high cognitive demands are defined as 1.5 standard deviations above the mean, average cognitive demands are at the mean, and low cognitive demands are defined as 1.5 standard deviations below the mean; very high emotional labor is 2 standard deviations above the mean, high emotional labor is 1 standard deviation above the mean, average emotional labor is at the mean, low emotional labor is 1 standard deviation below the mean, and very low emotional labor is 2 standard deviations below the mean. As shown in Figure 1, the significant interaction suggests that for occupations with high cognitive demands, jobs high in emotional labor demands receive higher wages than do jobs low in emotional labor demands. For jobs low in cognitive demands, the reverse it true: Jobs characterized by high emotional labor demands receive lower wages than those characterized by low emotional labor demands. Not only was there a significant interaction between emotional labor demands and cognitive demands in the prediction of wages but also the percentage importance weight was 7.7%, meaning that 7.7% of the explained variance in occupational hourly wage rates can be attributed to the interaction.

To better illustrate the interplay between emotional labor demands and cognitive demands for occupations, we plotted occupations representative of high and low emotional labor and cognitive demands. Figure 2 plots several occupations on the basis of their scores for the emotional labor demands and cognitive demands dimensions respectively. This figure provides insight into the types of jobs that would evidence wage differentials for the application of emotional labor demands (i.e., high cognitive demands and high emotional labor demands), such as registered nurses and social workers, as well as those that would not (i.e., low cognitive demands and high emotional labor demands), such as travel attendants and waitpersons.

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[4] A three-way interaction among the job demand characteristics (physical, cognitive, emotional labor) was tested, yielding significant and positive results. However, because the results do not change our inferences about the operation of job demands, we have chosen not to include this analysis, as it detracts from the main relationship between emotional labor and wages.

[5] Simple slopes were computed using procedures described by Aiken and West (1991) with an unstandardized interaction, and the expected values derived from the simple slopes at the various levels of emotional labor and cognitive demands were converted from the log scale of the original regression back into log hourly wages using a normalizing transformation (Duan, 1983).

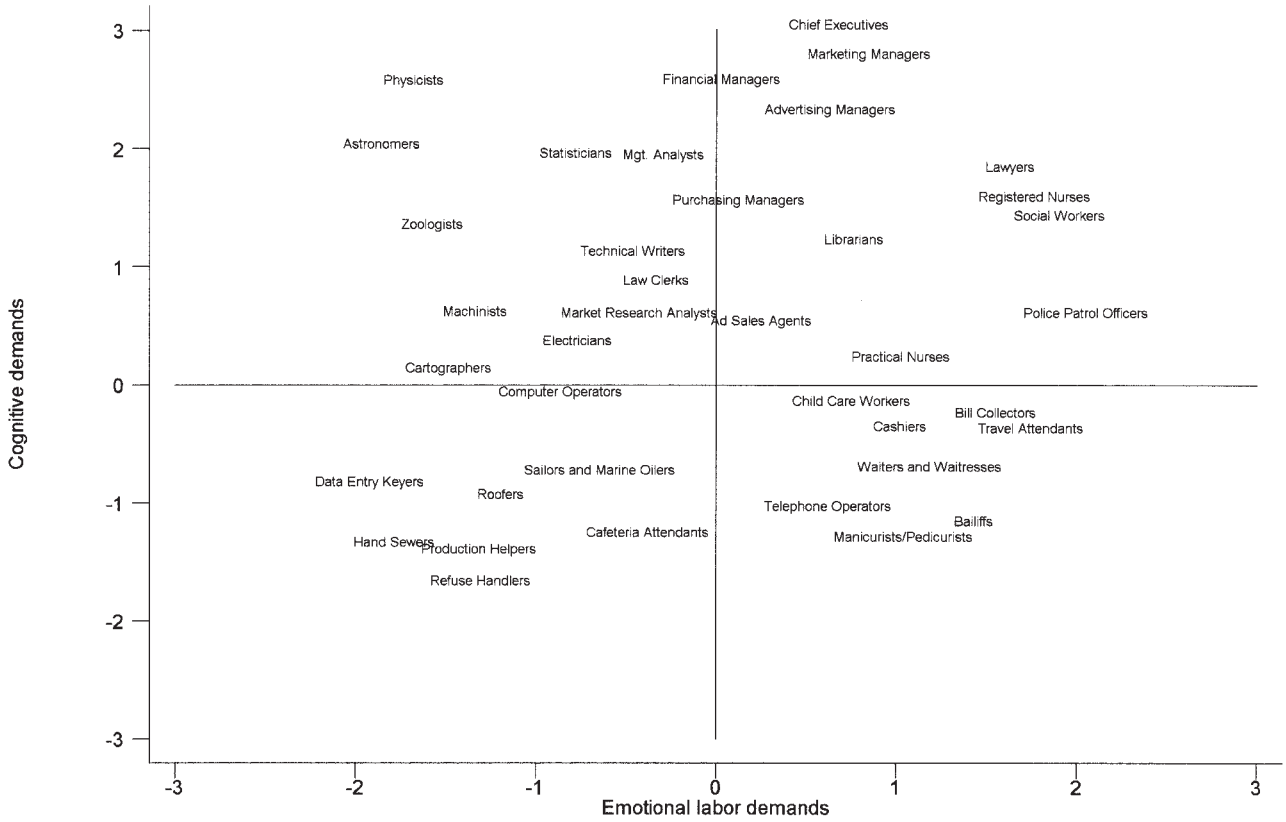

Figure 2. Occupations plotted by emotional labor and cognitive demands. Mgt. = management.

Discussion

This article explicitly considers the wage implications of occupation-level emotional labor demands. Our results suggest that contrary to the standard economic predictions derived from compensating wage differential theory, higher levels of emotional labor demands are not uniformly rewarded with higher wages. Rather, occupations with high cognitive demands evidence wage returns with increasing emotional labor demands; occupations low in cognitive demands evidence a wage penalty with increasing emotional labor demands. Thus, neither a wage increase nor a wage penalty seems to operate uniformly; rather, both may be operating dependent on the level of general cognitive demands required by the job.

In addition to the interaction, results are generally consistent with previous research results regarding occupational characteristics associated with higher wage rates, such as higher wages for occupations with a lower percentage of women, higher unionization rates, lower unemployment, and greater cognitive demands. The interaction between cognitive demands and emotional labor demands has a significant influence on wages over and above the effects of these variables typically associated with wages. Of particular note is the high variance accounted for in the wage equation by the full set of predictors ($R^2 = .812$).

The interaction between cognitive and emotional labor demands is only partially consistent with theories of job and role demands. Our expectations centered largely on the high cognitive demands side of the equation, predicting that wages would increase with the application of emotional labor demands to a cognitively demanding job. The drop in wages (rather than less of an increase in wages or a lack of effect) for occupations with low cognitive and high emotional labor demands was not predicted. Given these results, we feel that the scarcity model and the conservation of resources models are only partially consistent with findings and that the vitamin model is most effective at explaining our results.

Scarcity Hypothesis

The scarcity hypothesis suggests that it may be comparatively more difficult to find individuals who are good in both the cognitive and emotional domains than it would be to find individuals who are good in either domain individually. Our results support this idea, suggesting that those jobs that have both cognitive and emotional labor demands generate the highest wages. However, this model is not consistent with the finding that jobs low in both cognitive and emotional labor demands receive higher wages than those jobs low in cognitive demands and high in emotional labor demands.

Given these results, one might suggest that controlling for unemployment in the equation may be influencing results, as unemployment may be an indicator of scarcity of labor in the labor market. Although unemployment rate may be influenced by scarcity, it is influenced by a number of other factors as well, such as cyclical demand, seasonal work, and industry fluctuations. The unemployment rate may measure short-term differences in scarcity across occupations, but what is of critical interest here is how these

demands (cognitive, emotional, physical) influence outcomes in the long run. As such, we are using the unemployment rate to control for short-term transitory fluctuations to better isolate the longer term effects of emotional labor demands. In a long-run market clearing model, the unemployment rate should not be related to scarcity—everyone would sort into his or her optimal jobs, and wages would reflect scarcity, not the unemployment rate. Given that the long-run market clearing model is admittedly imperfect, we acknowledge that the unemployment rate may still capture some of these scarcity issues.

Given the complexity of these issues of unemployment and scarcity, we reran the analyses without controlling for unemployment. The general pattern of results and significance does not change, and the R^2 changes from .812 to .800. Also, the interaction plot does not change considerably. Thus, the results do not appear to be due to an artifact driven by the inclusion of unemployment rate.

An additional alternative explanation related to skills in the labor market may lie in other occupational characteristics that are related to the presence or absence of emotional labor. Workers in jobs with low cognitive and low emotional labor demands may have a different set of technical skills than those in jobs with low cognitive and high emotional labor demands. Although the levels of cognitive demands may be equivalent, the types of knowledge and skills and their value in the labor market may vary. Although our measures of job demands covered a wide array of activities, it is possible that some may not have been well tapped.

Conservation of Resources Theory

Results regarding occupations high in cognitive demands are consistent with the conservation of resources theory: High cognitive and emotional labor demands engender high levels of resource depletion, which may be compensated in the form of wages. However, results for jobs low in cognitive demands are not consistent with the conservation of resources theory. Presumably, occupations with high emotional labor demands and low cognitive demands result in greater resource depletion than occupations low in both cognitive and emotional labor demands. However, the form of the interaction shown in Figure 1 demonstrates that for jobs low in cognitive demands, the emotional labor demands are not compensated and in fact result in lower occupational wages.

One possible explanation for these results may be found in the means by which resources are replenished. Conservation of resources theory suggests that one effective way to regain resources that have been depleted is through rewarding social relations (Brotheridge & Lee, 2002; Hobfoll, 1998). Rewarding social interactions may be more available in those occupations with greater emotional labor demands, thus jobs that have high emotional labor demands may have greater opportunity to replenish resources through social interactions. However, the theory also suggests that resource loss has a stronger impact on psychological distress than does resource gain (Hobfoll, 1998; Hobfoll, Johnson, Ennis, & Jackson, 2003); losing resources from the demands of the job has a greater impact than gaining resources from rewarding social interactions. Thus, rewarding social interactions is unlikely to compensate fully for the depletion caused by emotional labor demands. This resource replenishment mechanism and asymmetry in impact may explain the interaction. Specifically, workers in jobs high in both cognitive and emotional labor demands, who experience the greatest resource depletion, are unable to replenish all lost resources with social interaction. For jobs with low cognitive demands and high emotional labor demands, resource depletion is not as extensive, thus the opportunities for rewarding social interactions available in these occupations may provide more adequate restoration of resources. The greater overall resource depletion coupled with the lower likelihood of replenishing resources for jobs with high cognitive and emotional labor demands (as compared with jobs with low cognitive and high emotional labor demands) may explain the increased wages in these occupations.

The Vitamin Model

The vitamin model (Warr, 1987), which proposes that the level of a job characteristic determines whether it is perceived favorably or unfavorably, is generally consistent with our results. For jobs high in cognitive demands, the application of emotional labor demands results in movement of these jobs into a zone in which the job characteristics are overly demanding and stressful. The vitamin model also explains the finding that for jobs with low cognitive demands, the emotional labor demands are not compensated and in fact result in lower occupational wages. When examining an array of job characteristics together, one might expect that workers who have low levels of cognitive demands may be understimulated (unlike workers in jobs with high cognitive demands) and emotional labor demands are not an unwelcome job feature. The application of emotional labor demands for workers with low cognitive demands does not move the worker into a zone in which the combination is overly demanding.

Consideration of exemplar jobs may be effective in communicating how the vitamin model operates in accordance with our findings. Consider the occupations of waitperson and data-entry keyer—two jobs similar in cognitive demands and dissimilar in emotional labor demands (see Figure 2). In this context, the vitamin model might suggest that both jobs are at a low (perhaps too low) level of cognitive demands and stimulation. However, for waitpersons, emotional labor demands provide needed stimulation for an otherwise cognitively undemanding job. Data entry keyers do not have this demand, which in this instance is a positive job feature, leaving workers with an understimulating, boring job. Given that interaction with others is a positive feature (at certain levels) in the vitamin model, it might suggest that most people would prefer to be a waitperson rather than key data all day. Thus, the wages for a job with low cognitive demands–high emotional labor demands such as a waitperson would be lower than those for a data entry keyer, given the tradeoff between interacting with people and having a boring, understimulating job. Thus, we feel that the vitamin model provides an explanation of the effects for jobs at both the low and high levels of cognitive demands. We also note that there was no significant interaction for emotional labor and physical demands, which suggests that these effects are not parallel across all job characteristics.

The Role of Worker Willingness

Worker willingness to be in occupations with cognitive and emotional labor demands may also play a role in explaining our results. Although worker willingness to meet certain job demands is not addressed explicitly in the theoretical models, the idea is not inconsistent with these models. For example, if we modify the pure

scarcity theory to include not only worker ability but also worker willingness to meet job demands, we can see that scarcity may result not only from a lack of able workers but also from a lack of willing workers. Similarly, workers may not be willing to undergo the resource depletion discussed in the conservation of resources model or withstand the undesirable job features discussed in the vitamin model.

In theory, compensating wage differentials function to compensate for jobs that people are less willing to do; at some point, the higher wages associated with compensating differentials will overwhelm workers' unwillingness to meet certain demands. However, these wage differentials may operate imperfectly because of such things as incomplete information about job characteristics and one's preferences for them, the existence of characteristics for which wages will be unlikely to compensate, or variability in evaluations of job attributes in the labor market. Thus, the role of workers' willingness may be influencing results over and above its role in directly influencing compensating wage differentials.

Furthermore, the role of worker willingness may manifest itself differently at different levels of job demand. Workers who have high cognitive demand jobs available to them have greater job choice (i.e., they have low cognitive demand jobs available to them as well) and may be unwilling to take high emotional labor demand jobs. Thus, emotional labor demands are given a wage increase for jobs with high cognitive demands. Conversely, workers who have only low cognitive demand jobs available to them may be more constrained in their choice and take whatever job is available to them regardless of the emotional labor demands. The jobs most available to them may be more likely to have emotional labor demands attached (e.g., customer-service jobs, retail industry). Because ability to meet emotional labor demands may be less identifiable by agreed-on markers than by ability to meet cognitive demands (e.g., degrees), less measurable, or possibly more trainable, workers can move into these high emotional labor demand jobs. Thus, choice may operate differently for different categories of workers (i.e., workers able to meet high or low cognitive demands jobs) thereby influencing the availability of these workers and ultimately influencing wages.

Implications

These results have implications for both employees and their employers. For employees in occupations that are not cognitively demanding and may in fact be tedious or devoid of challenge and stimulation, emotional labor demands may provide stimulation and become favorable job attributes. For employees in occupations that are cognitively demanding, the emotional labor demands are a taxing job attribute rather than a favorable one. Employers of workers in jobs with low cognitive demands and high emotional labor demands would be advised to highlight the opportunities and challenges of emotional labor as a positive feature and to ensure that interactions are maintained in the work role. Alternatively, staffing strategies could include the recruitment and hiring of individuals who value, like, and are a good fit with jobs that require social interaction. Employers of workers in occupations with high cognitive demands may consider ways to minimize the emotional demands or prepare workers to cope with them effectively (e.g., training designed to teach employees how to deal with emotionally challenging customer or patient interactions).

Limitations and Future Directions

The inferences from the current study are dependent on the appropriateness of our conceptualization of emotional labor. We relied on the O*NET work activities and work context data to define emotional labor, but there may be additional activities that, if included, would lend increased precision to our emotional labor assessment. In particular, although our measure is not constrained to emotional labor demands present when interacting with individuals outside one's organization, some items do emphasize this external component (e.g., dealing with external customers). Occupations that do not have the requirements for interaction with external individuals may also have emotional labor requirements, and these may be less well tapped by our measure. Furthermore, our measure does not allow us to determine the possible differential impact of different categories of emotional demands (e.g., expression or suppression of felt emotions, faking of unfelt emotions). Despite some possible deficiencies, we feel confident that we are tapping into the emotional labor construct space, given that the occupations that are designated as high and low in emotional labor using this operationalization are consistent with occupational categorizations elsewhere (Hochschild, 1983; Wharton, 1993). One possible criticism is that although service jobs were all greater than 1 standard deviation above the mean for emotional labor demands, they were not represented in the top 15. Our measure seems more likely to identify those jobs dealing with human distress and suffering, which may indeed be more emotionally demanding than traditional service jobs—suggesting that the measure is functioning well.

Although there are advantages to examining the relationship between emotional labor and wages at the occupational level, we are unable to make inferences about the relationship at the individual employee level. Alternative approaches at the individual level of analysis would be able to examine explicitly the role of individual differences in ability, interests, and willingness to meet emotional labor demands on individual employee outcomes.

In addition, longitudinal data would provide insight into these processes. Even though our results with and without unemployment as a control were largely similar, longitudinal approaches would allow for better examination of the unfolding of the long-term dynamics of scarcity in conjunction with the short-term dynamics of unemployment. In addition, a longitudinal approach using individual-level data might be particularly insightful, as it could examine how wages, satisfaction, and other outcomes unfold over time as individuals move in and out of jobs with changing job demands. Future research might capitalize on these alternative approaches.

Although we tried to control for occupational differences, it is possible that emotional labor activities are different across jobs. Specifically, the nature of emotional labor demands may change depending on the level of cognitive demands required, and these differences in emotional labor may influence wages. Given that emotional labor is a job feature that has only recently come under examination, we do not know whether emotional labor demands function differently or have differential effects depending on the occupation. The emotional labor performed by workers in jobs that also require cognitive capability may be qualitatively different or different in the type of demands (e.g., faking positive emotions vs. suppressing negative emotions) than those of workers in jobs that do not have high cognitive demands. For example, consider the

emotional labor involved in a short-term service encounter, which is likely to be quite scripted, versus the emotional labor involved in the patient–client relationship of a psychiatrist. Morris and Feldman (1996) proposed that the duration of an encounter is a relevant dimension of the emotional labor experience. However, much of the research on emotional labor has been conducted in a very limited set of occupations—occupations in which emotional labor is expected (e.g., customer service personnel, nurses, waitstaff), and variability in the type of emotional labor may be difficult to capture. The extent to which results in occupations demanding emotional labor generalize to other occupations awaits further empirical work. The type of emotional labor performed may also be influenced by the predominant gender associated with the occupation. Although emotional labor has been considered "women's work," our results suggest that jobs high in emotional labor are predominantly female (e.g., nurses) as well as predominantly male (e.g., police officers, bailiffs); many emotional labor jobs are stereotypically gendered, but not only stereotypically female jobs as previously assumed. We have controlled for the proportion of women in an occupation to account for these gender effects; however, they are likely more complicated and result from both stereotypes about the value of nurturant social skills (England, 1992; Kilbourne et al., 1994) as well as differences in the types of emotional labor performed (e.g., dealing with angry individuals vs. caring for others). Future research should examine the role of gender segregation in occupations and emotional labor.

Conclusion and Future Directions

This article provides preliminary support for an interaction between the cognitive and emotional labor demands of an occupation on wages; specifically, occupations with high cognitive demands evidence wage returns with increasing emotional labor demands; occupations low in cognitive demands evidence a wage penalty with increasing emotional labor demands. Future work should replicate these findings using additional data sources, including the potential for investigating individual-level effects. In addition, the nature of the emotional labor demands and the resultant work activities should be explored to identify potential differences in emotional labor behaviors.

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