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Are Anxious Workers Less Productive Workers? It Depends on the Quality of Social Exchange

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In this article, we draw from Conservation of Resources Theory to advance and test a framework which predicts that emotional exhaustion plays an explanatory role underlying the relation between workplace anxiety and job performance. Further, we draw from social exchange theories to predict that leader–member exchange and coworker exchange will mitigate the harmful effects of anxiety on job performance. Findings across a 3-wave study of police officers supported our model. Emotional exhaustion mediated the link between workplace anxiety and job performance, over and above the effect of cognitive interference. Further, coworker exchange mitigated the positive relation between anxiety and emotional exhaustion, while leader–member exchange mitigated the negative relation between emotional exhaustion and job performance. This study elucidates the effects of workplace anxiety on resource depletion via emotional exhaustion and highlights the value of drawing on social resources to offset the potentially harmful effects of workplace anxiety on job performance.

Keywords: workplace anxiety, emotional exhaustion, job performance, social exchange, cognitive interference

Workplace anxiety has been estimated to cost the U.S. economy over $40 billion annually (Kessler & Greenberg, 2002). This is a serious concern, because recent surveys suggest that 41% of workers report elevated levels of workplace tension (American Psychological Association, 2012), and anxiety-related absences are on average four times longer than other nonfatal illnesses or injuries (Bureau of Labor Statistics, 2001). Although employees vary in their propensity to experience workplace anxiety, there is also evidence that it is on the rise (D'Mello, 2012; Twenge, 2000).

This is troublesome from the perspective of employees, because it may contribute to the increased separation between work and family life (Schieman, McBrier, & van Gundy, 2003) and higher levels of job dissatisfaction (Boyd, Lewin, & Sager, 2009). This is also troublesome from the organization's perspective, because high levels of anxiety have negative implications for ethical behavior (Kouchaki & Desai, 2015), organizational effectiveness (Boyd et al., 2009), and economic success (Forsyth, Kelly, Fusé, & Karekla, 2004). Importantly, anxiety also has potentially detrimental consequences for employees and organizations in the form of reduced job performance (Ford, Cerasoli, Higgins, & Decesare, 2011). Given that job performance is one of the outcomes that organizations and employees care most about (Motowidlo, 2003), consideration of the role of workplace anxiety in the context of job performance is crucial and serves as the first step in developing strategies to mitigate its potentially negative effects.

Considering the significant role that anxiety can play in employee attitudes and behaviors, as well as the detrimental consequences associated with anxiety, it is not surprising that there are a large number of empirical articles on anxiety and stress in occupational health journals (e.g., Fay & Sonnentag, 2002; Ford et al., 2011; Gomes, Faria, & Gonçalves, 2013). Despite this work, research exploring the link between workplace anxiety and overall job performance has been limited. Research in this domain has largely examined the relations between general anxiety levels and performance on specific tasks, such as performance on selection tests (e.g., Proost, Derous, Schreurs, Hagtvet, & De Witte, 2008), job interviews (McCarthy & Goffin, 2004), and school-based examinations (e.g., Seipp, 1991). This work draws from cognitive interference theories, providing evidence that high levels of anxiety interfere with the ability to process task-related information, which results in reduced levels of performance (Eysenck, Derakshan, Santos, & Calvo, 2007). While cognitive interference is a viable mechanism for explaining the anxiety–performance relation on specific tasks, we suggest that it is not the only mechanism underlying the relation between workplace anxiety and job performance.

Drawing from Conservation of Resources Theory (COR; Hobfoll, 1989), we propose that a key explanatory mechanism for the relation between workplace anxiety and job performance is emo-

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tional exhaustion. This is because typical levels of job performance require the execution of multiple tasks over sustained periods of time. As such, high levels of job performance are dependent on the protection and facilitation of cognitive and personal resources. When employees experience high levels of workplace anxiety, these resources are depleted, resulting in emotional exhaustion, and ultimately reduced levels of job performance.

Given the consequences of workplace anxiety, an examination of factors that may serve to buffer its negative effects is also crucial. In the current study, we consider social exchange relationships as a critical moderator of the relation between workplace anxiety and job performance. The nature of people's workplace exchange relationships has been shown to provide resources that can aid in improving employees' work outcomes (Cohen & Wills, 1985; Ng & Sorensen, 2008). By bringing together research on workplace exchange relationships with that on workplace anxiety, we provide employees and organizations with insight into potential buffers of the negative consequences of anxiety on job performance.

Our study makes a contribution to the existing research in a number of ways. To begin, we draw from past theory and research to develop a conceptual framework that delineates the mechanisms by which workplace anxiety has an effect on performance. In doing so, we integrate insights from several literatures and assess the extent to which emotional exhaustion and cognitive interference mediate the relation between workplace anxiety and workplace effectiveness. Positioning emotional exhaustion as a mechanism is fundamentally different from past interference models that have been used to explain anxiety–performance relations. Providing conceptual clarification of this issue is valuable, because it has theoretical relevance for models of workplace anxiety, as well as practical relevance for treating the implications of workplace anxiety.

We further contribute to the literature by examining moderators of the workplace anxiety–job performance association, specifically examining the exchange relationship employees have with their supervisors, in the form of leader–member exchange (LMX), and the exchange relationship employees have with their colleagues, in the form of coworker exchange (CWX). Past work has focused on organization or policy-based solutions (e.g., telecommuting, flex time) to help individuals minimize work anxiety and stress (Kossek, Baltes, & Matthews, 2011). However, policy-based solutions often fail to achieve desired results (Nielsen, Taris, & Cox, 2010). We integrate COR (Hobfoll, 1989) to focus on personal-based resources that employees can leverage to reduce the potentially harmful effects of workplace anxiety. In doing so, we respond to calls for theory-based predictions about the differential effects of supervisor and coworker support (e.g., Ng & Sorensen, 2008). In the following section, we detail the theoretical rationale for our model and outline our hypotheses.

Workplace Anxiety

Workplace anxiety is conceptualized as feelings of nervousness and apprehension about the accomplishment of job tasks (cf., Eysenck et al., 2007; Muschalla & Linden, 2012; Zeidner & Matthews, 2005). It is a domain-specific construct that is affected by both individual differences and workplace characteristics (cf., Ganster & Schaubroeck, 1991; Motowidlo, Packard, & Manning, 1986; Spielberger, 1972). As such, it represents a stress response in the form of a strain symptom (Beehr, 1995; Jex, 1998).

Workplace anxiety is subsumed under the broader construct of performance anxiety, which reflects feelings of apprehension about the execution of specific tasks, including job interviews (McCarthy & Goffin, 2004), selection tests (Proost et al., 2008), school-based examinations (Cohen, Ben-Zur, & Rosenfeld, 2008), artistic performances (van Kemenade, van Son, & van Heesch, 1995), and sports competitions (Kleine, 1990). However, while the general construct of performance anxiety is well grounded in past research, the consequences of dealing with workplace anxiety have not been fully explored.

Workplace anxiety is conceptually and empirically related to other types of anxiety and related affective constructs, but is not redundant with these constructs. It is distinct from state-based anxiety because in contrast to a transient situation-specific trait, it reflects general feelings of work-related anxiety that manifest over time (Spielberger, 1972). It differs from general trait anxiety because workplace anxiety reflects an evaluative-based anxiety that is workplace specific (Zeidner & Matthews, 2005). Our definition also distinguishes workplace anxiety from neuroticism, because anxiety is only one of the six components underlying neuroticism (McCrae & Costa, 1987), and neuroticism is not workplace specific.

Emotional Exhaustion and the Workplace Anxiety–Job Performance Relation

The few empirical investigations that have examined anxiety in the workplace have generally found a negative association between anxiety and job performance (Ford et al., 2011). These studies are informative, but have yet to consider the mechanism underlying observed relations. There are, however, several studies examining the mechanism between anxiety and specific task-based performance, such as testing situations and sports competitions. Meta-analytic reviews of these studies suggest that, consistent with the relation between anxiety and job performance, the relation between performance-based anxiety and subsequent task performance is negative (e.g., Bourhis & Allen, 1992; Kleine, 1990; Seipp, 1991). Importantly, studies of anxiety and performance focus on cognitive interference as the primary explanatory factor for the observed negative relations. A number of theories are subsumed under the rubric of cognitive interference, including the following: processing efficiency (Eysenck & Calvo, 1992), attentional control (Eysenck et al., 2007), and interference (Wine, 1980). Common to each of these theories is the proposition that anxiety interferes with people's ability to process *immediate* events, resulting in lower performance. There is considerable support for the role of cognitive interference as it relates to a number of specific tasks, such as performance anxiety and selection test scores (McCarthy, Hrabluik, & Jelley, 2009), exam grades (Sarason, 1984), sports outcomes (Wilson & Smith, 2007), and music success (Wan & Huon, 2005).

It is not surprising that in specific situations, cognitive interference mediates the relations between anxiety and the corresponding performance outcome. These situations are characterized by high levels of state-based anxiety and high levels of maximum performance because they represent evaluative contexts that require intense effort over relatively short periods of time (Campbell,

1990). Further, consistent with the definition of maximum performance derived by Sackett, Zedeck, and Fogli (1988), in these situations individuals are aware they are being evaluated, they are trying to maximize their performance, and their performance is measured after a relatively short duration of time. Given that high levels of concentration and focus are required, it is not unexpected that cognitive interference has been found to draw individuals' attention away from the task at hand, resulting in lower levels of task performance (Eysenck et al., 2007).

In contrast, typical performance (i.e., overall job performance) is characterized by employee behavior under more routine conditions and is elicited in contexts requiring sustained effort over *extended* periods of time, such as the day-to-day performance of job duties (Campbell, 1990; Sackett et al., 1988). In fact, in most occupations, a considerable portion of the daily work employees engage in likely becomes routine over time. Overall job performance thus encompasses numerous types of tasks that require varying degrees of cognitive resources, as well as a host of other personal resources, including energy, effort, and persistence (Beal, Weiss, Barros, & MacDermid, 2005; Trougakos & Hideg, 2009). Overall job performance is an aggregate of the expected organizational value of employees' behavior over time (Motowidlo, 2003), and the day-to-day performance of most jobs requires the execution of multiple work tasks over an extended time period (Beal et al., 2005). Thus, while cognitive interference may be the primary mechanism driving performance in highly specific situations that trigger momentary anxiety, experiencing continually elevated workplace anxiety in relation to performing a job over time is less likely to be explained by cognitive interference alone. In line with Ajzen and Fishbein's (1977) principle of compatibility, which highlights the importance of matching predictors to relevant outcomes, we suggest that the underlying process driving the relation between workplace anxiety and job performance is emotional exhaustion.

COR theory provides an excellent framework for detailing the process leading to, and the consequences of, emotional exhaustion. COR theory holds that individuals strive to protect and build resources such as time and energy (Hobfoll, 1989). Conserving these resources is important, because resource drain can lead to increased levels of emotional exhaustion (Maslach, Schaufeli, & Leiter, 2001). Importantly, COR also aligns with the extended, or aggregate, effects that workplace anxiety may have on employees.

Specifically, COR has a "long-term" emphasis, focusing on the depletion of resources over time (Hobfoll, 1989). In fact, a key premise of COR theory, as well as other research specifically focusing on emotional exhaustion, is that the continual depletion of personal resources, such as energy and focus, will result in burnout symptoms such as emotional exhaustion (Richardsen, Burke, & Leiter, 1992). Moreover, COR theory holds that "ongoing work demands consistently deplete resources at a faster rate than resources can be replenished" (Freedy & Hobfoll, 1994, p. 312). Anxious workers, by their very nature, are at a greater disadvantage in this regard given their tendency to use up resources worrying about task-related issues and to engage in self-critical thoughts regarding their abilities (Sarason, 1984).

In line with these propositions, prior organizational research has found emotional exhaustion to be caused by negative antecedents such as stress (Garrosa, Moreno-Jiménez, Rodríguez-Muñoz, & Rodríguez-Carvajal, 2011), effortful emotion regulation (Goldberg & Grandey, 2007), and general negative affectivity (Thoresen, Kaplan, Barsky, Warren, & de Chermont, 2003). In turn, high levels of emotional exhaustion prompt employees to distance themselves, or withdraw from their work, resulting in lower levels of performance (Cropanzano, Rupp, & Byrne, 2003). This is primarily because of the considerable toll that emotional exhaustion has on individuals' motivation to perform effectively (Halbesleben & Bowler, 2007). Similarly, emotional labor research links emotional exhaustion to more workplace errors (Goldberg & Grandey, 2007) and reduced service quality (Grandey, 2003).

The current study moves beyond past models of cognitive interference as the underlying process linking workplace anxiety and performance. Specifically, workplace anxiety's impact on employees' job performance is likely to be influenced by emotional exhaustion above and beyond the effects of cognitive interference. We propose the following hypothesis:

> *Hypothesis 1:* Emotional exhaustion will mediate the relation between workplace anxiety and job performance when accounting for cognitive interference.

The Role of Social Exchange Resources as Moderators

COR theory also provides insights into factors that might buffer the negative relation between workplace anxiety and performance. According to COR theory, in order to mitigate the effects associated with resource loss, people "call on resources available to them from the environment" (Hobfoll, 1989, p. 517). One such resource, social support, may be especially critical (Hobfoll, 1989, 2001). Social support can act to offset resource drain and its corresponding negative consequences in many ways, such as broadening one's pool of available resources (Hobfoll, 1989), promoting positive coping skills (Dunahoo, Hobfoll, Monnier, Hulsizer, & Johnson, 1998), and reducing work task demands (Ray & Miller, 1994). Combined, these social support functions serve to replenish the resource pool, resulting in "positive gain spirals" (Hobfoll, 1989, p. 470). In turn, positive spirals may offset the effects of emotional exhaustion, promoting better performance (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008).

Social support is particularly important in work contexts. Individuals with whom employees interact can provide both material and socioemotional resources that can aid employees in their daily work activities (Ng & Sorensen, 2008). However, few studies have examined whether social support can mitigate the potentially harmful effects of anxiety on workplace performance (cf., Kamdar & Van Dyne, 2007). We extend COR theory to consider two fundamental work-related sources of social exchange support—the support employees receive from their fellow employees (CWX; Sherony & Green, 2002), and the support employees receive from their supervisors (LMX; Graen & Uhl-Bien, 1995).

These relations are critical sources of social support because coworkers and supervisors are ideally placed to provide employees socioemotional and material resources (Graen & Uhl-Bien, 1995; Sherony & Green, 2002). Indeed, high-quality social exchange relations are associated with high levels of trust, honesty and encouragement (e.g., Graen & Scandura, 1987; Sherony & Green, 2002). Thus, we predict that employees with high CWX and LMX draw upon the socioemotional and material support received from

peers and supervisors to replenish their resources and aid their performance when experiencing anxiety-induced emotional exhaustion.

Further, drawing on Ajzen and Fishbein's (1977) principle of compatibility, we suggest that CWX and LMX will play differential roles in buffering the anxiety–exhaustion–job performance link. Ajzen and Fishbein (1977) detail the importance of matching predictors to relevant outcomes and in doing so highlight the value of considering the fundamental differences between CWX and LMX. In particular, CWX relations are more likely to be relational (interpersonal) in nature (Karasek, Triantis, & Chaudhry, 1982; Wu & Hu, 2009), whereas LMX relations are more likely to be subject to power differentials and thus more transactional (economic) in nature (Ng & Sorensen, 2008; Sakurai & Jex, 2012). As such, we suggest that the moderating effects of these relationships are likely to be most impactful at different stages in the process.

The moderating role of CWX. The relationship between coworkers is qualitatively distinct from that between employees and their supervisors (Chiaburu & Harrison, 2008). Employees often possess significantly less power with respect to supervisors, but relatively equal levels of power with respect to coworkers (Diefendorff & Greguras, 2009). In addition, unlike roles formal leaders occupy, the roles coworkers occupy rarely involve performance monitoring. As a consequence, relations between employees and coworkers center more on social reciprocity and trust (Cole, Schaninger, & Harris, 2002), while relations between supervisors and employees center more on economic transactions and authority (Karasek et al., 1982). This line of reasoning is supported by traditional models of the employment relationship, which are generally grounded on economic or transactional exchanges between employee and employer (LMX) and the existence of social or relational exchanges between employee and coworker (CWX). It is also consistent with Social Exchange Theory (Blau, 1964), which focuses on the perceived obligations that exist in the exchange relationship between two parties. These obligations can create two types of relations—an economic exchange that is based on materialistic resources, or a social exchange that is based on trust and reciprocity (Blau, 1964).

While these exchange relations can cross, such that employees can have social exchanges with supervisors and economic exchanges with coworkers, authentic social exchanges of a more intimate and personal nature are more likely to arise between coworkers. This occurs for two main reasons. First, employees are more likely to use impression management tactics and mask negative emotions when interacting with individuals who have high relative power (Diefendorff, Morehart, & Gabriel, 2010). Thus, when interacting with supervisors, employees have a stronger tendency to suppress negative emotions, such as anxiety, while when interacting with coworkers, employees only partially suppress negative emotion (Diefendorff & Greguras, 2009). Similarly, employees have been found to share emotional experiences with coworkers in almost 80% of emotional workplace events (Hadley, 2014). Thus, employees are more likely to be relaxed and share internal affective states when interacting with coworkers than with supervisors (Ferris & Mitchell, 1987). Second, coworkers interact more frequently with each other than with supervisors, providing a more accurate daily picture of each other's well-being (Hüffmeier & Hertel, 2011). These frequent interactions increase the number of emotional and behavioral resources that coworkers draw from to provide social support (Chiaburu & Harrison, 2008).

Past research supports these propositions by demonstrating that coworkers play a critical role in impacting employees' well-being (Halbesleben, 2006; Viswesvaran, Sanchez, & Fisher, 1999). This is not surprising in light of the frequency with which coworkers share their emotional experiences (Hadley, 2014). When people in social exchange relationships share their internal feelings with trusted others, they are more likely to receive social support to help deal with problems, and are more effectively able to cope with the potential negative consequences of work strains (Snow, Swan, Raghavan, Connell, & Klein, 2003). In turn, these factors strengthen one's ability to cope with strain (Thoits, 2011). It thus stands to reason that elevated coworker support should help mitigate the emotionally exhausting effects of workplace anxiety.

Although research has yet to examine the potential buffering effect of CWX in the workplace anxiety–emotional exhaustion relationship, there is some evidence for the moderating role of coworker support in the relation between general stressors and strains. For example, coworker support has been found to minimize the negative effects of strain on affective (e.g., depressed mood; Karasek et al., 1982) and health-related (e.g., depression; LaRocco, House, & French, 1980) outcomes. Coworker support has also been found to buffer the relation between abusive supervision and emotional exhaustion (Wu & Hu, 2009), as well as the effects of an unsafe work climate on employees' affective commitment (van Emmerik, Euwema, & Bakker, 2007). Finally, meta-analytic data indicates that coworker social support is a stronger buffer of the stressor-strain relation than supervisory support (Viswesvaran et al., 1999). These findings are consistent with the buffering hypothesis advanced by Cohen and Wills (1985), which suggests that social support intervenes in the experience of stressful experiences. We predict CWX will play a pivotal role in buffering the link between workplace anxiety and emotional exhaustion.

> *Hypothesis 2:* CWX will moderate the relation between workplace anxiety and emotional exhaustion, such that this positive relation will be weaker when CWX is high.

The moderating role of LMX. Whereas coworker support buffers the exhaustion associated with anxiety, we suggest supervisor support is more likely to impact the link between emotional exhaustion and job performance. As described, interactions between employees and supervisors are less likely to involve emotional sharing and displays of emotions by employees than are interactions between coworkers. This is because employees are more likely to control their emotional expressions when interaction partners have high relative power, compared with when the power differential is equal or lower (Diefendorff et al., 2010). Further, compared with coworker interactions, those between employees and supervisors are more likely to be based on economic exchange, where employees provide high levels of performance in exchange for tangible rewards (Hüffmeier & Hertel, 2011). According to social exchange theory, this occurs because supervisory support promotes employees' sense of obligation and increases their motivation to perform (Sakurai & Jex, 2012). This elevated motivation should allow employees with higher LMX to overcome the effects of exhaustion on performance. This is consistent with

research on personal resources (e.g., Muraven & Slessareva, 2003), which shows that people who have higher levels of motivation are able to maintain performance effectiveness even when resources are depleted (i.e., states of exhaustion). Under conditions of higher supervisor exchange relationship quality, the associated elevated motivation will help offset the detrimental effects of emotional exhaustion, allowing employees to perform effectively despite feeling internally depleted. Thus, "supervisor support should lead to more technically precise work outcomes than should coworker support" (Ng & Sorensen, 2008, p. 246).

In addition to the potential motivational effects of higher LMX quality, we suggest that higher LMX relationships provide employees with greater external resources that can help to offset depleted internal personal resources. Supervisors are often gatekeepers to tangible resources within an organization (Graen & Scandura, 1987). Therefore, strong dyadic relationships with supervisors can help employees obtain material resources necessary to perform at higher levels (Ng & Sorensen, 2008; Scott & Bruce, 1994), allowing them to overcome internal resource deficits more effectively by leaning more heavily on external resources. Thus, supervisor support is particularly relevant in buffering the link between exhaustion and performance.

Consistent with these propositions, empirical findings suggest that, overall, higher quality LMX is related to higher levels of job performance (Gerstner & Day, 1997), organizational citizenship behaviors (Ilies, Nahrgang, & Morgeson, 2007) and organizational attitudes (e.g., job satisfaction; Ng & Sorensen, 2008). Supervisor support is also linked to stronger relations with task performance than coworker support (Kamdar & Van Dyne, 2007), further bolstering the notion that LMX should be especially relevant in facilitating performance compared with CWX. Further, Sakurai and Jex (2012) found that supervisor support moderated the relation between emotions and performance such that when supervisor support was low, negative emotions had a detrimental impact on employee levels of work effort. However, when supervisor support was high, no significant relations were obtained. We predict the following:

> *Hypothesis 3:* LMX will moderate the relation between emotional exhaustion and job performance, such that this negative relation will be weaker when LMX is high.

Method

To test our predictions, we conducted a field study with the Royal Canadian Mounted Police. A police context is highly relevant to our scholarly research interests and pragmatic concerns about workplace anxiety. Police officers have a broad set of responsibilities that emphasize the provision of ". . . public safety by maintaining order, responding to emergencies, protecting people and property, enforcing motor vehicle and criminal laws, and promoting good community relations" (O'Net, 2014). Their work environment is characterized as high in stress, because they must deal with violent offenders, crime scenes, accident victims, victims of abuse, death, and public suspicion, among other demands (Andersen & Papazoglou, 2014). Further, over 80% of police officers report that they interact with angry and/or unpleasant individuals on a daily basis (O'Net, 2014), placing them at a significantly higher risk of physical and mental health effects than the general population (Hartley, Burchfiel, Fekedulegn, Andrew, & Violanti, 2011). Thus, workplace anxiety is highly relevant and is a common occurrence among policing organizations (U.S. Department of Labor, 2011).

Participants and Procedure

Participants included police officers, their supervisors, and their peers.[1] They were recruited using a weekly newsletter that is e-mailed to all officers. The newsletter informed officers that the purpose of the study was to obtain feedback on police officer well-being and job behaviors and directed them to the survey website. The website contained the study questionnaires and asked participants to provide contact information for their supervisor and one coworker. At Time 1, officers completed the measure of workplace anxiety. At Time 2 (3 months later), officers completed measures of emotional exhaustion and cognitive interference. At Time 3 (6 weeks following the Time 2 survey), supervisors completed measures of LMX and job performance, while peers completed the measure of CWX.

A total of 770 individuals responded to the first survey, and 595 individuals responded to the second survey (response rate = 77%). Participants were predominantly male (80%), Caucasian (88%), and an average of 41 years of age. Most respondents had earned a college diploma or university degree (80%). On average, they had been a member of the police force for 15 years and had been working under their current rank for 6 years. A variety of job titles were held by the participants. Comparisons were made between the respondent sample and the general population of police officers to examine whether sampling bias posed a threat to the external validity of the study. No significant differences were found between respondents and the general population of officers with respect to age, sex, ethnicity, or education level.

A total of 326 officers (41%) agreed to have their supervisors provide evaluations. Approximately six weeks after officers had completed the second survey, supervisors were invited to rate their employee's performance and LMX using a Web based questionnaire. A total of 267 supervisors participated. The majority of supervisors were male (86%) Caucasians (88%) who had earned a college diploma or university degree (81%). The average supervisor in the sample was 48 years old, had been a police officer for 24 years, and had been working under their current rank for four years. Supervisors held a variety of job titles. Officers were also asked to identify a peer with whom they had regular contact at work. Like supervisors, peers were sent an invitation to rate CWX approximately 6 weeks after officers had completed the second survey. A total of 164 peers responded. The majority were male (77%) Caucasians (88%) who had earned a college diploma or university degree (76%).

Our final sample included 267 officers who had completed Time 1 and Time 2 surveys, and had their performance rated by their supervisor. Peer ratings were obtained for 154 of these officers. The majority of officers were male (78%) Caucasians (88%) who had earned a college diploma or university degree (80%). On average, they had been a member of the police force for 18 years and had been working under their current rank for 5.5 years.

[1] Our definition of peer includes any coworker that an officer has in their network.

Measures

With the exception of the demographic variables, all scales were assessed using a Likert-type rating that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Psychometric properties of the selected scales have been found to be strong in past research, and each scale exhibited adequate internal consistency reliabilities in the current study.

Workplace anxiety. Workplace anxiety was assessed with eight items modified from the performance anxiety scale developed by McCarthy and Goffin (2004). A sample item is: "I am overwhelmed by thoughts of doing poorly at work" (α = .94). See Appendix for full item list.

Emotional exhaustion. Emotional exhaustion was assessed with the five-item subscale of the Maslach Burnout Inventory General Survey (Schaufeli, Leiter, Maslach, & Jackson, 1996). A sample item is: "I feel used up at the end of the work day" (α = .95).

Cognitive interference. Cognitive interference was assessed with six items adapted from the Cognitive Interference Questionnaire (Sarason, Potter, & Sarason, 1986). A sample item is: "When I am at work, I think about non-work activities" (α = .90).

Supervisor-rated LMX. Supervisors assessed LMX by completing seven items from Graen and Uhl-Bien's (1995) LMX scale. We asked supervisors to evaluate LMX to mitigate common source biases and to more fully capture the support focal employees receive from their interaction partners. Past research suggests that people are often not aware of the full extent of support they might receive from their interaction partners, and that this support provides valuable resources and benefits beyond what the employee is aware they are receiving (Howland & Simpson, 2010). A sample item is: "I use my power to help this employee solve problems at work" (α = .80).

Peer-rated CWX. Peers assessed CWX by completing the same seven items from Graen and Uhl-Bien's (1995) LMX scale. Consistent with LMX, we asked peers to evaluate CWX to mitigate common source biases and to more fully capture the support focal employees receive from their interaction partners. A sample item is: "I use my power to help this employee solve problems at work" (α = .72).

Supervisor-rated job performance. Supervisors assessed job performance by completing a 20-item scale of police officer job competencies that were identified through a job analysis. Supervisors evaluated the extent to which their employee displayed each competency (e.g., "This person independently produces consistent, high quality results" and "This person identifies, creates, and implements effective solutions to problems"; α = .97). Performance ratings were collected for research rather than for administrative purposes because operational ratings are prone to leniency error (Curtis, Darvey, & Ravden, 2005).

Results

Table 1 presents the descriptive statistics and correlations among study variables. We tested the hypotheses in our conceptual model with structural equation modeling (SEM) using Amos 19 software (Arbuckle, 2010). Maximum likelihood estimation procedures were used and three indices were employed to assess the fit of our models: the Chi-Square index, the Root Mean Square Error of Approximation (RMSEA), and the Comparative Fit Index (CFI). This combination of fit indices ensured the inclusion of an index that considers how much variance is explained in light of how many degrees of freedom are used (i.e., RMSEA), as well as an index that is a direct function of how much variance is explained by the model (i.e., CFI; Bentler, 1990). For the CFI, values approaching 1 indicate a good fit. In the case of the RMSEA, values approaching 0 indicate a good fit. Given that we also conducted comparisons of non-nested models, we also include the Akaike Information Criterion (AIC: Akaike, 1987) and the Bayesian Information Criterion (BIC; Raftery, 1995). For each of these, smaller values indicate a stronger fit. The power of our analyses was found to be 1.0 for a test of close fit (RMSEA $\leq$.05; Preacher & Coffman, 2006).

We first examined the measurement model by randomly grouping items within each scale into three parcels that served as indicators of each latent construct (Williams & Anderson, 1994). Covariances among all latent factors were free to vary. Results indicated that our 6-factor measurement model achieved a strong fit to the data, $\chi^2(120) = 180.2$, $p < .01$; RMSEA = .04; CFI = .98; AIC = 318.16; BIC = 565.68. Moreover, item parcel loadings were significant (.72 to .98, $p < .01$), suggesting that the items represented their intended constructs. We compared our model to a five-factor model that grouped LMX and job performance together, $\chi^2(125) = 384.73$, $p < .01$; RMSEA = .09; CFI = .93; AIC = 409.61; BIC = 639.20; a five-factor model that grouped CWX and LMX together, $\chi^2(125) = 419.22$, $p < .01$; RMSEA = .09; CFI = .92; AIC = 547.22; BIC = 776.81; and a one-factor model that grouped all constructs onto a single factor, $\chi^2(135) = 2749.29$, $p < .01$; RMSEA = .27; CFI = .30; AIC = 2857.29;

Table 1
Descriptive Statistics and Intercorrelations Among Scale Composites and Latent Variables

Variables	*M*	*SD*	1	2	3	4	5	6
1. Workplace anxiety	2.34	1.16	—	.62***	.24**	−.03	−.05	−.16*
2. Emotional exhaustion	2.79	1.22	.50***	—	.29**	.01	.01	−.15*
3. Cognitive interference	2.54	.94	.33***	.09	—	−.07	−.05	−.18*
4. Leader–member exchange (LMX)	4.20	.53	−.02	−.03	−.02	—	.05	.78***
5. Coworker exchange (CWX)	4.20	.46	−.39***	−.06	−.01	.03	—	.23**
6. Job performance	4.19	.64	−.16*	−.14*	−.03	.55***	.16*	—

Note. N = 267 for all variables except CWX, where N = 154. Correlations below the diagonal represent zero-order relations among the *observed* scales. Correlations above the diagonal represent relations among the *latent* scales assessed in our structural equation analyses.
*$p < .05$. **$p < .01$. ***$p < .001$.

BIC = 3084.64. In each case, our six-factor model was a stronger fit to the data.

Next, we tested our hypothesized model by following procedures recommended for testing moderation effects with continuous variables in SEM (Moulder & Algina, 2002). Adopting Jaccard and Wan's (1995) procedure, we mean centered main effect variables before computing product term indicators in order to reduce collinearity between the main effect and interaction terms. Findings indicated that the hypothesized model yielded an acceptable fit to the data, $\chi^2(244) = 358.21$, $p < .01$; RMSEA = .04; CFI = .97; AIC = 539.25; BIC = 826.23, and is presented in Figure 1.[2] As illustrated, the findings supported our hypotheses.

Hypothesis 1 predicted that emotional exhaustion will mediate the relation between workplace anxiety and job performance while accounting for cognitive interference. As predicted, workplace anxiety demonstrated a significant positive relation with emotional exhaustion ($\beta = .62$, $b = .58$, $SE = .05$, $p < .001$), which in turn demonstrated a significant negative effect with job performance ($\beta = -.13$, $b = -.07$, $SE = .03$, $p < .001$). Further, the standardized coefficient for the indirect effect of workplace anxiety on performance through emotional exhaustion and cognitive interference was −.10 ($b = -.05$, $SE = .01$), and the 95% bias-corrected confidence interval ranged from −.15 to −.04 (5,000 bootstrap resamples). In contrast, the standardized direct effect of workplace anxiety on job performance was .00, nonsignificant (*ns*; $b = .00$, $SE = .00$). These findings indicate that the relationship between workplace anxiety and job performance is fully mediated by emotional exhaustion and cognitive interference. Further, emotional exhaustion explained additional variance in job performance above and beyond cognitive interference ($\Delta R^2 = .04$). According to current benchmarks, this effect is medium in magnitude (Bosco, Aguinis, Singh, Field, & Pierce, 2015). Our findings also indicate that anxiety explains 38% of the variance in emotional exhaustion, 6% of the variance in cognitive interference, and that the combined effects of anxiety, emotional exhaustion and cognitive interference explain 63% of the variance in job performance. Overall, our results support Hypothesis 1.

Our second set of hypotheses focused on the moderating roles of CWX and LMX. As illustrated in Figure 1, CWX ($\beta = -.17$, $b = -.20$, $SE = .08$, $p < .01$) was found to moderate the relation between workplace anxiety and emotional exhaustion, providing support for Hypothesis 2, while LMX ($\beta = .10$, $b = .12$, $SE = .06$, $p < .01$) was found to moderate the relation between emotional exhaustion and job performance, providing support for Hypothesis 3. Figure 2 illustrates the CWX interaction effect. Simple slopes analyses revealed that emotional exhaustion was more strongly related to workplace anxiety at low levels of CWX ($b = .78$, $SE = .11$), $t(266) = 6.84$, $p < .01$, than at high levels of CWX ($b = .39$, $SE = .12$), $t(266) = 3.33$, $p < .01$. Figure 3 illustrates the LMX interaction effect. Simple slopes analyses revealed that emotional exhaustion was more strongly related to job performance at low levels of LMX ($b = -.23$, $SE = .04$), $t(266) = -5.14$, $p < .01$, than at high levels of LMX ($b = -.03$, $SE = .04$), $t(266) = -.67$, *ns*. In terms of the magnitude of effects, our findings indicate that anxiety and CWX explain 41% of the variance in emotional exhaustion, and that emotional exhaustion and LMX explain 59% of the variance in job performance. Overall, our results support Hypotheses 2 and 3.

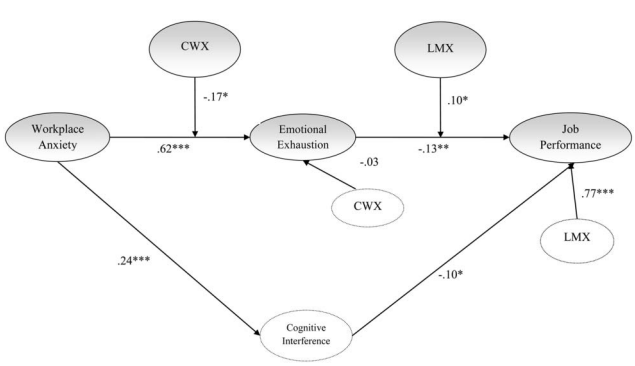

Figure 1. Structural equation modeling (SEM) final model results. *Note.* Standardized coefficients are presented here—please see results section for unstandardized coefficients and standard errors. Fit statistics: $\chi^2(244) = 358.21$, $p < .01$; Root Mean Square Error of Approximation (RMSEA) = .04; Comparative Fit Index (CFI) = .97.

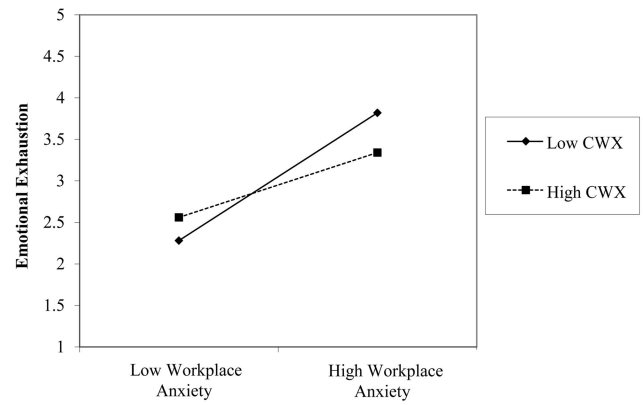

Figure 2. Coworker exchange (CWX) as a moderator of workplace anxiety and emotional exhaustion.

Our final set of analyses involved testing two alternative models. First we tested a "*reverse-causation*" model, in which job performance was set as an antecedent to emotional exhaustion and cognitive interference, which in turn were set as antecedents to workplace anxiety. The reverse causation model exhibited a weaker fit to the data than our hypothesized model, $\chi^2(244) = 572.74$, $p < .01$; RMSEA = .07; CFI = .93; AIC = 732.74; BIC = 1019.72. Second, we tested a "*full*" model in which *both* LMX and CWX were positioned as moderators of the relation between anxiety and emotional exhaustion, and both LMX and CWX were positioned as moderators of the relation between emotional exhaustion and job performance. This model retained cognitive interference as a mediating mechanism. The "full" model exhibited a weaker fit to the data than our hypothesized model, $\chi^2(392) = 1037.61$, $p < .01$; RMSEA = .08; CFI = .88; AIC = 1179.54; BIC = 1,549.03. Nevertheless, the overall pattern of regression weights replicates that found in our predicted model. Specifically, CWX (but not LMX) significantly moderates the

[2] The overall pattern of findings remains the same when organizational tenure, neuroticism (measured via John & Srivastava, 1999), and job stress (measured via Parker & DeCotiis, 1983), are controlled.

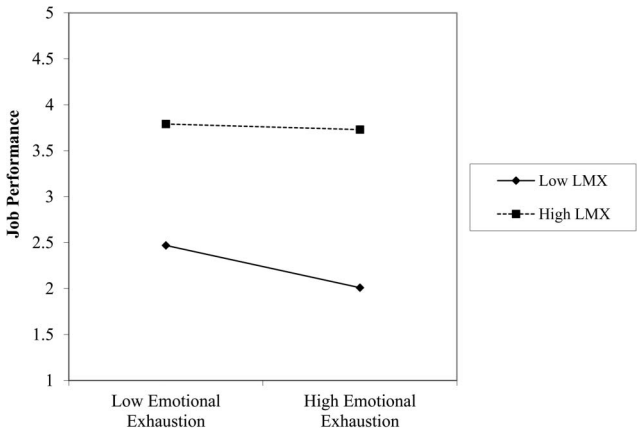

Figure 3. Leader–member exchange (LMX) as a moderator of emotional exhaustion and job performance.

relation between workplace anxiety and emotional exhaustion, while LMX (but not CWX) significantly moderates the relation between emotional exhaustion and job performance. Combined, our results provide strong support for our theoretically driven model of workplace anxiety and job performance.

Discussion

Our research advances the field by demonstrating that emotional exhaustion is an important mechanism underlying the relation between workplace anxiety and job performance. We also show that social exchange can mitigate the harmful effects of workplace anxiety, such that CWX moderates the relation between anxiety and emotional exhaustion, and LMX moderates the relation between emotional exhaustion and job performance. Thus, while workplace anxiety may come at a high cost, social support can mitigate its negative effects.

Contributions to Research

There are a number of theoretical contributions of this study. First, our study extends the use of COR theory by proposing that individuals who experience high levels of workplace anxiety may perceive the workplace as a threatening environment and thus remain in a high state of alert to avoid resource loss. Given that this state of alert requires high levels of vigilance, it actually serves to deplete resources and is related to emotional exhaustion. We contribute to COR theory by exploring the role of workplace anxiety on resource depletion, as well as the role that resource loss plays in employee job effectiveness.

Second, our research moves beyond cognitive interference and considers emotional exhaustion as the key process underlying the relation between anxiety and performance. Emotional exhaustion was found to mediate above and beyond cognitive interference. These findings represent an important contribution to the field, as they suggest that meaningful models of workplace anxiety should consider both the effects of workplace anxiety on resource depletion via emotional exhaustion, as well as the effects of workplace anxiety on cognitive interference via off-task processing. Further, these findings extend past research that has examined the relations between employee well-being and job performance (e.g., positive and negative affect; Kaplan, Bradley, Luchman, & Haynes, 2009), by illuminating a viable mechanism—emotional exhaustion—that may underlie the relations. Ultimately, our article is one of the first to simultaneously examine the process of resource loss with exhaustion and cognitive interference as it relates to worker effectiveness, providing another important contribution to COR theory.

A third contribution of our study is that we consider moderators of the relations between workplace anxiety, emotional exhaustion and job performance. Drawing from COR theory, our study highlights the role of social support in buffering the negative effects of workplace anxiety and emotional exhaustion. Our study finds support for the role of interpersonal resources (i.e., social support) as an antidote for the harmful effects of anxiety on job performance. Thus, our paper integrates the COR and workplace exchange literatures which, until now, have largely existed in parallel. We also add to the social exchange literature by demonstrating the importance of considering relationship source, as our results highlight differences in coworker and supervisor relationships.

Practical Implications

This study has notable implications for individuals who suffer from high levels of workplace anxiety, for individuals who work in demanding environments (e.g., role conflict, high workload), and for individuals who work in high-pressure industries (e.g., police officers, financial traders). First, it demonstrates that workplace anxiety comes at a high cost, as anxious individuals are more likely to experience emotional exhaustion, and in turn, have lower levels of job performance. As a result, it is crucial for these employees to have access to resources that will allow them to recover from the resource drain that workplace anxiety can induce.

Our findings also highlight the important role of social exchange resources, as employees who were able to draw on supervisors and coworkers for support were less likely to experience the harmful effects of workplace anxiety and emotional exhaustion. Thus, continuously working to improve relations with coworkers and supervisors is paramount. Research evidence suggests that open communication is the key to developing these strong relations (Miles, Patrick, & King, 1996). From the perspective of organizations, our findings highlight the importance of training all employees to develop positive work relations and to engage in supportive behaviors. We also acknowledge the potential for social support to buffer the effects of workplace anxiety on cognitive interference, and we encourage future research to explore this possibility.

Additional strategies that may reduce the harmful effects of workplace anxiety include giving employees breaks (Trougakos & Hideg, 2009), providing them with autonomy over how to use break times (Trougakos, Hideg, Cheng, & Beal, 2014), and reducing emotional demands on employees (Goldberg & Grandey, 2007). Individual-based strategies, such as high quality sleep (e.g., Sonnentag, Binnewies, & Mojza, 2008) and learning new hobbies (e.g., Fritz & Sonnentag, 2006), have also been found to be effective resource recovery tools. Importantly, future work should consider the mechanisms underlying each technique, such as the extent to which it reduces emotional exhaustion, cognitive interference, or other mediating factors.

Strengths, Limitations, and Directions for Future Research

A core strength of our work is that we draw from past theory and research to develop a conceptual framework delineating mediating and moderating mechanisms of the relation between workplace anxiety and job performance. We provide a robust test of our predictions by adopting a three-wave methodological design, capturing data from multiple sources, and utilizing advanced statistical procedures to test our complete model. Nevertheless, it would be advantageous to assess our model over longer periods of time. Future research that includes more than three waves would help to fully elucidate these relations.

An additional strength is that our research was based on a large sample of employees and included ratings of LMX and job performance by supervisors, as well as ratings of CWX by coworkers. This type of data is challenging to obtain and increases the generalizability of our findings. It also helps to bridge science and practice by advancing our theoretical understanding of the role of workplace anxiety, while providing valuable information on how to manage its potentially harmful effects. A corresponding limitation is that our sample was comprised of police officers who were predominantly Caucasian males. While these demographics are representative of North American police officers, it would be advantageous for future research to examine whether the results of the present study hold for minority group members, as well as for other job incumbent populations. We believe that our model would receive support with other groups, particularly high-stakes occupations such as military personnel, firefighters, and airline pilots. The basis for this assertion is that the theoretical links between the variables in our model are the same, regardless of the demographic background and/or type of job that the employee holds. However, we acknowledge that the strength of these effects may differ across jobs. For example, police officers often work in shifts which provides periods of "down-time." This type of break may serve to restrict the effects of cognitive interference in the workplace anxiety—job performance relation.[3] Future work that examines our model in low-stress occupations would be particularly valuable.

We also elected to have coworkers and supervisors provide the rating of exchange relationship quality. We were interested in the support that employees received from those in their work environment and we wanted to ensure that our measurement was aligned with our goals. Having coworkers and supervisors provide ratings of CWX and LMX is also consistent with research on invisible support, which demonstrates that targets of support may not be completely aware of the exact nature of support they receive, and that this invisible support can influence their emotional and performance effectiveness (e.g., Bolger & Amarel, 2007). Therefore, we obtained other ratings of exchange quality to capture the support that employees may not recognize. It also provided us with a second and third source of data, thus reducing concerns of common source variance and strengthening our methodology. At the same time, we acknowledge that our measures captured the level of support perceived by the giver of the support, and may thus include biases. It would be advantageous for future research to adopt a multiple-rater approach and compare the ratings of social support made by the target employee to the ratings made by supervisors and peers.

We would also like to note that the slope for the effect of emotional exhaustion on job performance for those with high levels of LMX (Figure 3) was not statistically significant. While this might have been a result of supervisors rating subordinates with better quality LMX consistently higher on job performance, regardless of exhaustion levels, we suggest that it is more likely that this result was a product of the LMX relationship. To be specific, the ability to maintain a consistent level of excellent performance is a critical element of high quality LMX (Graen & Scandura, 1987). High LMX individuals are relied upon by supervisors to perform the more critical tasks of the work group (Dienesch & Liden, 1986). These employees are likely to do what is necessary to meet performance requirements at a consistently high level regardless of their levels of exhaustion, in order to maintain the success of the work group, as well as the quality of their LMX relationship. At the same time, supervisors may be more likely to recognize when high LMX employees are exhausted, and in turn provide them with greater resources to help them maintain performance. The end result is a consistent level of performance regardless of employee exhaustion levels. We encourage future research to more fully explore the nature and mechanisms underlying these relations.[4]

Conclusion

The current study tested and found support for emotional exhaustion as a new theoretical link between workplace anxiety and job performance, even while controlling for a previously hypothesized mechanism, cognitive interference. This finding is important because it suggests that workplace anxiety should be modeled in a more holistic manner than has been done in the past by incorporating emotional exhaustion and cognitive interference as explanatory mechanisms. Our study also provided insight into social exchange as an antidote to the effects of workplace anxiety on job performance. Overall, these findings provide further insights into the consequences of workplace anxiety, and demonstrate that while workplace anxiety comes at a high cost, it can be managed.

[3] We thank an anonymous reviewer for this suggestion.
[4] We thank an anonymous reviewer for this suggestion.

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Appendix

Workplace Anxiety Items

1. I am overwhelmed by thoughts of doing poorly at work.
2. I worry that my work performance will be lower than that of others at work.
3. I feel nervous and apprehensive about not being able to meet performance targets.
4. I worry about not receiving a positive job performance evaluation.
5. I often feel anxious that I will not be able to perform my job duties in the time allotted.
6. I worry about whether others consider me to be a good employee for the job.
7. I worry that I will not be able to successfully manage the demands of my job.
8. Even when I try as hard as I can, I still worry about whether my job performance will be good enough.

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