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LEADER-MEMBER EXCHANGE, COMMUNICATION FREQUENCY AND BURNOUT

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Abstract

In a field study of 128 middle-managers in similar roles but in different organizations within the UK public sector, we find that the quality of their leader-member exchange (LMX) relationship with their immediate supervisor is negatively related to the three dimensions of burnout. As hypothesized, LMX and communication frequency are found to interact in the prediction of emotional exhaustion. For low-quality LMX, the relationship between communication frequency and emotional exhaustion is positive with an increasingly steep upward slope as communication frequency increases. For high-quality LMX, the relationship is not as expected, but is curvilinear with an inverted U-shape. The findings support the importance of the social context of the workplace for the development and persistence of burnout. The results indicate that the quality of the relationship between employees and their manager in combination with the nature and the frequency of their interpersonal interactions are important factors for employee well-being. Furthermore, the study contributes to the literature on LMX by providing further support for the importance of LMX being dependent on how frequently employees and managers interact for a new and very important outcome of emotional exhaustion.

Keywords: Leader-Member Exchange (LMX), Communication Frequency, Burnout.

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INTRODUCTION

Burnout is an important topic for investigation as this condition is related to important negative outcomes for individuals and organizations (Cordes & Dougherty, 1993). Research has found that burnout is related to reduced employee organizational commitment (Hakanen, Bakker & Schaufeli, 2006), lower productivity and performance (Maslach, Schaufeli & Leiter, 2001), reduced engagement (Hakanen et al., 2006), employee ill-health (Schaufeli & Bakker, 2004), increased absenteeism and depression (Neveu, 2007), and increased turnover intentions (Schaufeli & Bakker, 2004). Individuals working in any kind of occupation are at risk (Maslach et al., 2001). Leiter and Maslach (2005) suggest that burnout is the biggest occupational hazard faced by employees as they feel overloaded, lacking in control, do not receive recognition or have their self-worth confirmed, and have to deal with conflicting values.

Most research on the causes of burnout has focused on the influence of situational stressors in the workplace (Bakker, van der Zee, Lewig & Dollard, 2006; Maslach et al., 2001). However; other factors have also been identified as important for employee well-being. Two of these are communication (Albrecht & Adelman, 1987a) and the social context at the workplace (van Dierendonck, Hayes, Borrill & Stride, 2004). It has been argued that interpersonal interactions are key to understanding the development and persistence of burnout (Buunk & Schaufeli, 1993; Cordes, Dougherty & Blum, 1997). An individual's manager is often the most immediate and salient person in the workplace for an employee (Janssen & van Yperen, 2004). The employee-manager social interaction has been identified as being especially important for influencing employee job stress and the process of coping (Cherniss, 1980). Leader-member exchange (LMX) theory (see Graen & Uhl-Bien, 1995; Gerstner & Day, 1997) is one of the main theoretical approaches in the study of leader-follower relationships, positing that the quality of the leader-member exchange relationship

will influence organizational and personal outcomes (Greguras & Ford, 2006). Prior research into leadership and burnout is limited (Halbesleben & Bowler, 2007), however, and there are only a limited number of studies of feedback and burnout (Schaufeli & Enzmann, 1988).

This paper makes a four-fold contribution. First, we offer a test of the findings of Bakker, Demerouti and Euwema (2005) of a negative relationship between LMX and the three components of burnout in a new organizational and national setting. Second, we provide an additional study of communication frequency to the limited number of prior studies. Third, we bring together LMX and communication frequency in the prediction of emotional exhaustion. Fourth and finally, we test the finding of Kacmar, Witt, Zivnuska and Gully (2003) that the importance of LMX is dependent on how frequently employees and managers interact for a new and very important outcome for employees and organizations.

THEORY AND HYPOTHESES

Burnout

Burnout is a multidimensional syndrome made up of energy depletion and dysfunctional attitudes towards the workplace. It can be considered as a kind of prolonged stress reaction (Schaufeli & Enzmann, 1998). Burnout is a combination of physical fatigue, emotional exhaustion and cognitive weariness. The most influential definition of burnout has been offered by Maslach (1982), who characterized burnout as being composed of three components: emotional exhaustion, depersonalization and reduced personal accomplishment. Emotional exhaustion is the most obvious manifestation of burnout (Maslach et al., 2001), being a chronic state of emotional and physical depletion characterized by feelings of being overextended and exhausted by the emotional demands of work. Depersonalization is a measure of the individual's interpersonal context, representing a negative or detached response by the individual (Maslach, 1993). Depersonalization occurs as a result of the

individual's need to cope with emotional exhaustion by protecting her or himself from the stressors in the workplace by disengaging (Lee & Ashforth, 1990). It is characterized by withdrawal and mental distancing from recipients (Demerouti, Bakker, Nachreiner & Schaufeli, 2001), and development of an indifferent or cynical attitude (Maslach, 1993). Reduced personal accomplishment refers to the individual's negative self-evaluation (Maslach, 1993). An individual feels a sense of reduced personal accomplishment when s/he feels ineffective and incompetent at work, associated with a lack of productivity or achievement (Maslach, 1993).

The job demands-resource (JD-R) model (Demerouti et al., 2001; Schaufeli & Bakker, 2004) attributes well-being of the employee to factors within the work environment. Significant research has shown support for the model (see, for example, Bakker, Demerouti & Euwema, 2005; Hakanen et al., 2006). The model predicts that high job demands are primarily and positively related to an individual's emotional exhaustion, and job resources are primarily and negatively related to an individual's disengagement (Bakker et al., 2004). Job demands are defined as "those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological or psychological costs" (Demerouti et al., 2001: 501). Job resources are defined as "those physical, psychological, social, or organizational aspects of the job that may do the following (a) be functional in achieving work goals, (b) reduce job demands and the associated physiological and psychological costs, (c) stimulate personal growth and development" (Demerouti et al., 2001: 501). The model assumes that burnout develops when job demands are high and job resources are limited (Bakker et al., 2005). More recent research has supported further development of the model, suggesting that high job demands may not result in burnout if employees have adequate job resources (Bakker, Demerouti, Taris, Schaufeli & Schreurs, 2003).

A second model which examines the relationship between demands and resources, on the one hand, and burnout, on the other hand, is the conservation of resources (COR) model (Hobfoll, 2001; Hobfoll & Freedy, 1993). The strength of the COR model is its ability to explain the process leading to burnout (Halbesleben & Bowler, 2007). The model posits (a) that psychological stress occurs when an individual's resources (the objects, personal characteristics, conditions or energies that are valued by an individual) are threatened with loss and (b) that burnout occurs when work demands consume resources at a greater rate than the individual can replenish them. Major demands include role ambiguity, role conflict, high workload and pressure, and the occurrence of stressful events. Major resources include social support and job enhancement opportunities such as control, participation in decision-making and autonomy. The key is how employees acquire, maintain and manage resources to meet current demands and buffer against resource depletion (Wright & Hobfoll, 2004). COR theory posits that psychological stress occurs in individuals when their resources are threatened with loss, when resources are actually lost or when insufficient gains are made after significant resource investment (Hobfoll, 2001; Hobfoll & Freedy, 1993). The COR model has become more popular in recent years, and received a great deal of empirical support (Neveu, 2007; Halbesleben & Bowler, 2007).

Leader Member Exchange (LMX) Theory and Burnout

Leader-member exchange (LMX) is one of the main theoretical approaches in the study of leader-follower relationships. LMX has been found to influence employees' attitudes and perceptions of the organizational environment. It is increasingly being used to understand the processes that affect employee outcomes (Davis & Gardner, 2004). LMX theory assumes that leaders form different relationships with each of their employees (Graen & Uhl-Bien, 1995). In exchange for higher levels of opportunity, autonomy, more of the leader's time and

support, valued resources (Graen & Uhl-Bien, 1995), and formal and informal rewards (Sparrowe & Liden, 1997), employees in high-quality LMX relationships feel obligated to contribute to the advancement of the leader's agenda, undertaking jobs and tasks with often a high level of criticality and difficulty. As a result, they invest more time, effort and energy than their counterparts in low-quality LMX relationships (Graen & Uhl-Bien, 1995). In low-quality LMX relationships, employees receive few resources from their manager, and the employee's behavior is based largely around the employment contract (Graen & Uhl-Bien, 1995). Employees do what is required of them but little more. Prior research has confirmed that individuals who consider themselves to be in high-quality LMX relationships assume greater responsibility (Liden & Graen, 1980), engage in more in-role performance (Janssen & van Yperen, 2004) and display higher levels of organizational citizenship behavior (Greguras & Ford, 2006) than those in low-quality LMX relationships.

Significant research has consistently confirmed the relationship between role stressors such as role ambiguity and conflict with stress (see, for example, O'Driscoll & Beehr, 1994), indicating that role ambiguity is an important antecedent factor for the development of burnout (see, for example, Cordes & Dougherty, 1993). LMX has been found to be negatively related to role ambiguity and conflict (Nelson, Basu & Purdie, 1988). It follows that employees in high-quality LMX relationships are likely to experience higher job demands in terms of workload, but lower demands in terms of role ambiguity and role conflict, than employees in low-quality LMX relationships.

In terms of job resources, participation in decision-making and autonomy have been consistently found to be negatively related to all three dimensions of burnout (Schaufeli & Enzmann, 1998). Autonomy has also been shown to buffer the impact of work overload on emotional exhaustion (Bakker et al., 2005). Prior research has found that employees in high-quality LMX relationships have higher levels of autonomy in their roles (Schriesheim et al.,

1998), are able to engage in higher levels of participation (Nelson et al., 1988), have higher levels of job involvement (Greguras & Ford, 2006), and receive more delegation from the supervisor (Schriesheim et al., 1998). Supervisory support has also been reported to be an important variable in the study of the relationship between job characteristics and burnout (Rafferty, Friend & Landsbergis, 2001). In their meta-analysis, Lee and Ashforth (1996) found that emotional exhaustion and depersonalization were negatively related to support from the supervisor. High-quality LMX relationships are characterized by high levels of loyalty, which can be considered as the degree to which each member of the exchange will protect the other from outside forces in their environment. In particular, when faced with difficult situations, employees in high-quality LMX relationships can rely on their managers for emotional support (Dienesch & Liden, 1986). Individuals in high-quality LMX relationships receive more of the leader's time, more information, and higher levels of emotional support and respect (Sparrowe & Liden, 1997) than those in low-quality LMX relationships. It has been argued that the quality of the LMX relationship between an employee and the manager, and thus the level of emotional support and valued resources they receive, is "pivotal in determining the member's fate within an organization" (Sparrowe & Liden, 1997: 522). Moreover, LMX has been reported to affect an individual's perceptions of organizational support (Wayne, Shore & Liden, 1997). It has been suggested that managers in high-quality LMX relationships may introduce the employee to key people in their social network, which could lead to additional information being available, as well as to other forms of support and resource availability (Sparrowe & Liden, 1997).

As discussed above, the JD-R model predicts that high job demands will not result in burnout if the individual has adequate resources (Bakker et al., 2003). It also predicts that not only are job resources required to meet job demands, but they will also contribute uniquely to employee well-being (Xanthopoulou, Bakker, Heuven, Demerouti & Schaufeli, 2008). It

seems reasonable to expect that individuals in high-quality LMX relationships will experience higher levels of job demands in terms of workload, but will benefit from reduced job demands such as role ambiguity and role conflict vis-à-vis individuals in low-quality LMX relationships. It can also be expected that they will receive higher levels of job resources such as information, social and emotional support, valued resources and job enhancement opportunities like control, participation in decision-making and autonomy. Moreover, COR theory posits that psychological stress occurs in individuals when resources are threatened with loss or are actually lost, and when insufficient gains are made after resource investment (Hobfoll, 2001; Hobfoll & Freedy, 1993). Furthermore, COR argues that that burnout occurs when work demands consume resources at a greater rate than the individual can replenish them. As LMX relationships develop over time and occur through negotiated and reciprocated exchanges, with a deepening sense of mutual trust, respect and obligation for each other as each party responds to the invitations and investments of the other (Graen & Uhl-Bien, 1995), it seems unlikely that an employee will invest resources beyond a limit that will result in her/him starting to suffer from burnout.

A further argument for a negative relationship between LMX and, in particular, emotional exhaustion comes from consideration of differences in style and content of communication by the supervisor between high and low-quality LMX relationships. In high-quality LMX relationships, supervisors tend to adopt a more positive tone (Dienesch & Liden, 1986), using communication behavior that reinforces affect and relationship-building (Fairhurst, 1993). Prior research has confirmed LMX quality to be negatively related to levels of dominance adopted by supervisors when communicating with employees (Fairhurst, Rogers & Sarr, 1987). In low-quality LMX relationships, supervisors are more likely to use positional power and authority (Fairhurst & Chandler, 1989), are more likely to be antagonistic and adversarial (Fairhurst, 1993), and communication tends to be top-down and

unidirectional with little attempt to motivate the employee (Graen & Uhl-Bien, 1995). Therefore, individuals in high-quality LMX relationships are likely to experience positive communication and contact with their supervisor, resulting in them receiving increased support and achieving increased mastery and control over workplace stressors. In low-quality exchanges, in contrast, contact with the supervisor is likely to be unpleasant, causing strain to the employee.

Cordes et al. (1997) posit that where interactions with their manager cause strain to employees, they will become vulnerable to burnout. Prior research has found that positive communication buffers the stress-strain relationship, whilst negative communication with the supervisor leads to a reverse buffering effect (Fenlason & Beehr, 1994). As emotional exhaustion can be considered to closely resemble traditional stress reactions (Cordes & Dougherty, 1993), and can be conceptualized as a type of strain that results from workplace stressors (Demerouti, et al., 2001), it follows that in low-quality LMX relationships contact with the supervisor is likely to result in higher levels of burnout, particularly emotional exhaustion, while in high-quality LMX relationships contact with the supervisor will result in lower levels of burnout, and particularly emotional exhaustion.

Prior research has supported a positive relationship between LMX quality and well-being (see, for example, Martin, Thomas, Charles, Epitropaki & McNamara, 2005). In the two prior studies that we are aware of, LMX was found to have significant direct and indirect effects on emotional exhaustion in employees of a medium-sized hospital in the south-eastern United States (Thomas, 2005), and was negatively related to all three components of burnout in employees of a large institute for higher professional education in the Netherlands (Bakker et al., 2005). The following hypotheses are therefore proposed for investigation.

Hypothesis 1a *The quality of the LMX relationship is negatively related to emotional exhaustion.*

Hypothesis 1b *The quality of the LMX relationship is negatively related to depersonalization.*

Hypothesis 1c *The quality of the LMX relationship is negatively related to reduced personal accomplishment.*

Communication Frequency, LMX and Burnout

A number of authors argue for the importance of communication as a fundamental requirement for well-being (Albrecht & Adelman, 1987a; van Dierendonck et al., 2004). In their communication theory perspective of social support, Albrecht and Adelman (1987a) posit that social support is a communication phenomenon. They argue that individuals engage in supportive interactions in a search for human contact and meaning, and an attempt to make sense of their circumstances. They define a successful interaction as one in which support occurs and the individual realizes understanding that reduces uncertainty. This reduction in uncertainty provides individuals with a sense of mastery and control over stressors they face, resulting in a closer feeling of bonding between the two people in the interaction.

Workplace communication has been reported to play an active role in the job-stress process (Fenlason & Beehr, 1994). There are only a few studies available on feedback and burnout (Schaufeli & Enzmann, 1998). In a meta-analysis of six studies, lack of feedback was found to be positively related to all three components of burnout (Pfennig & Husch, 1994; cited in Schaufeli & Enzmann, 1998: 83). As previously discussed, differences in style and content of communication by supervisors exist between high and low-quality LMX relationships. High-quality LMX relationships are characterized by supervisors tending to adopt a more positive tone (Dienesch & Liden, 1986), using communication behavior that reinforces affect and relationship-building (Fairhurst, 1993), and demonstrating loyalty (Liden & Maslyn, 1998; Maslyn & Uhl-Bien, 2001). In low-quality LMX relationships, in

contrast, supervisors are more likely to use positional power and authority (Fairhurst & Chandler, 1989), and are more likely to be antagonistic and adversarial (Fairhurst, 1993). It follows, on the one hand, that an increase in communication frequency will only provide individuals with additional resources, social support and an increase in mastery and control over stressors in the workplace through a reduction in uncertainty when they have a high-quality LMX relationship with their manager. On the other hand, in low-quality LMX relationships, an increased level of interaction with the manager is more likely to cause higher levels of strain to the employee.

Contact frequency has been found to be an important factor in influencing individual's attitudes and views. For example, research by Redman and Snape (2002) into ageism in teaching found that the frequency of contact with older teachers was negatively related to discriminatory attitudes in individuals. The more young teachers met older teachers, the less discriminatory they became. Moreover, Kacmar et al. (2004) found that the importance of LMX was dependent on how frequently managers and employees interacted. In low-quality LMX relationships, it is likely that increased interaction with their manager will be unpleasant, subjecting the employee to high levels of psychological costs and strain. Further, low-quality LMX relationships are characterized by low trust (Graen & Uhl-Bien, 1995). Prior research has found a negative relationship between trust and the use of negative influencing tactics such as assertiveness through face-to-face confrontations and the use of anger to try and force compliance (Ringer & Boss, 2000). It seems reasonable to assume that unpleasant contact with the supervisor, the use of negative influencing tactics by the individual and resentment will consume significant emotional energy and personal resources. The conservation of resources theory and the primacy of loss argument predict that this will have a large impact on the individual's level of emotional exhaustion. As communication frequency increases, it seems reasonable to assume that the increased level of strain

experienced may result in the employees being less able to replenish their internal resources; they may become even more prone to emotional exhaustion at an increasing rate. This suggests that the relationship between communication frequency and emotional exhaustion may be curvilinear, with an upward sloping curve for individuals in low-quality LMX relationships. For employees in high-quality LMX relationships, we expect that the rate of transfer of resources and support to the employees from their manager will increase as their level of communication frequency increases. As the level of contact increases, the employee will have more internal resources provided, and hence will be prone to emotional exhaustion at a decreasing rate. The following hypotheses are therefore proposed for investigation.

Hypothesis 2 *The relationship between communication frequency and emotional exhaustion is positive when LMX is low with an increasingly upward slope.*

Hypothesis 3 *The relationship between communication frequency and emotional exhaustion is negative when LMX is high with an increasingly downward slope.*

METHODS

Sample and Procedure

The participants in this study were middle managers working in a similar role in each of their own local authority areas in England in the public sector. The main purpose of the individuals' role was the formulation and implementation of an improvement strategy in their respective local authority area to meet a national improvement target set by the UK Government. Individuals were contacted and provided with a statement of the aims of the research and an invitation to voluntarily complete an on-line questionnaire. Respondents were assured of confidentiality and that there were no right or wrong answers. One hundred and

twenty-eight completed questionnaires were received, which represents a response rate of 74.3% of the estimated total number of individuals in this role. Of the respondents, 85.2% were female and 14.8% were male, and 87.5% had worked with their current line manager for more than three months.

Measures

Burnout. To measure the respondents' level of burnout we used the 22-item Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1981). The MBI scale has demonstrated high internal consistency and test-retest reliability (Lee & Ashforth, 1990), and is the most "universally used" scale to assess burnout (Schaufeli & Enzmann, 1998: 50). Responses were gathered on a 0 to 6 Likert-type scale. For each item, response 0 represents the lowest level of burnout, while response 6 reflected the highest level. For instance, a sample item is *"I feel emotionally drained from my work"*. (Cronbach's $\alpha = .88$ for emotional exhaustion, $\alpha = .74$ for depersonalization, and $\alpha = .88$ for reduced personal accomplishment).

LMX. To assess the respondents' perception of the quality of their LMX with their manager, we used the seven-item LMX-7 scale (Graen & Uhl-Bien, 1995). In their meta-analytic review of LMX theory, Gerstner and Day (1997) found that LMX-7 appeared to provide the soundest psychometric properties, recommending it as the best measuring instrument of the overall exchange quality. Responses were gathered on a 1 to 5 Likert-type scale. For each item, response 1 represents the lowest level of LMX, while response 5 is associated with the highest level. For instance, a sample item is *"Do you know where you stand with your manager … do you usually know how satisfied your manager is with you?"* (Cronbach's $\alpha = .93$).

Communication Frequency. To measure the frequency of communication between the employee and the manager, McAllister's (1995) four-item scale was used. Responses were

gathered on a 1 to 5 Likert-type scale. For each item, response 1 indicates the lowest frequency of communication, while response 5 represents the highest frequency. For instance, a sample item is *"Do you interact with your manager at work?"* (Cronbach's $\alpha = .87$).

Control variables. Data on the respondents' gender and whether they had worked with their current line manager for more than three months were collected. Gender was coded as 0 for female and 1 for male. Previous research has indicated that the quality of the relationship between the manager and an employee is established within the first two months (Bauer & Green, 1996). Tenure was coded as 0 for more than three months and 1 for less than three months. Significant pressure is exerted by the government on underperforming local authorities. Due to the recognition of the centrality of the role of the local manager for the achievement of the national strategy and the local targets, the level of target achievement was included as a proxy for the level of demand, strain or pressure that was experienced by individual managers. Results for the previous two quarters were collected from the Office of National Statistics (ONS) for each local area, and were subsequently matched to the respective individuals and the average target achievement calculated.

Analyses

Although one measure (job pressure) was obtained from the Office of National Statistics (ONS), the measures of LMX as perceived by the employee and the personal outcome of burnout could only be obtained by asking information from the individuals in the study directly. As self-report questionnaires were used to collect data at the same time from the same participants, common-method variance (CMV) could be a reason for concern (Podsakoff & Organ, 1986). Post hoc statistical investigations were conducted to see if CMV was a major concern in any of the analyses. Firstly, we conducted a Harman One-Factor test (Podsakoff, MacKenzie, Podsakoff & Lee, 2003) for each analysis and then, secondly, we ran

an exploratory factor analysis (EFA) to see whether the measures loaded cleanly onto their relevant factors. For the emotional exhaustion, depersonalization and reduced personal accomplishment analyses, the first factor extracted accounts for 32.2%, 37.9% and 32.8%, respectively. As no single factor emerges from the factor analyses and one general factor was not found for the majority of the covariance in the independent and dependent variables, we conclude that common-method variance is not a pervasive problem in these analyses.

Secondly, we conducted a principle component analysis using Oblique rotation to extract three factors, representing the dependent variable and the two independent variables. For the emotional exhaustion, depersonalization, and reduced personal accomplishment analyses, all items load cleanly onto their respective factors with loadings above .54 and cross-loadings below .20, .31 and .24, respectively. Hair, Black, Babin, Anderson and Tatham (2006: 128) state that only factor loadings of .50 and above are significant for a sample of 120 at a significance of $p < .05$, which decreases to .45 as the sample size increases to 150. Hence, only values above .49 were considered as significant in this analysis. As no significant cross-loadings are present, it is again indicated that common-method variance is not a pervasive issue in the analyses.

Table 1 reports the means, standard deviations and zero-order Pearson correlations among the variables. As expected, LMX and communication frequency are positively correlated ($r = .436$ with $p = .000$). As predicted, LMX is negatively correlated to emotional exhaustion ($r = -.224$ with $p = .012$), depersonalization ($r = -.280$ with $p = .002$) and reduced personal accomplishment ($r = -.169$ with $p = .061$). Communication frequency is not significantly correlated to any of the dimensions of burnout.

[Insert Table 1 about here]

After conducting the initial analyses, we ran a series of hierarchical regression analyses to assess the form and magnitude of the relationship between the predictor variables of LMX

and communication frequency, on the one hand, and the dependent variables of the dimensions of burnout, on the other hand. For reasons of consideration of multicollinearity between lower and higher-order terms (Aiken & West, 1991: 35), to reduce nonessential multicollinearity that may exist due to scaling and to provide computational advantages (Cohen, Cohen, West & Aiken 2003: 203) and for the benefits provided for interpretation of results (Aiken & West, 1991: 48), independent variables were mean-centred before being entered into the regression equations.

RESULTS

For the hierarchical regression analyses of the dependent variable emotional exhaustion, the control variables were entered in step 1. To test Hypothesis 1a, the linear LMX term was added in step 2. To test Hypotheses 2 and 3, the linear communication frequency (CF) term was added in step 3, the quadratic term CF^2 in step 4, and the product terms LMX × CF and the LMX × CF^2 terms in steps 5 and 6, respectively. The results are shown in Table 2.

[Insert Table 2 about here]

As predicted, LMX is found to be negatively related to emotional exhaustion with an unstandardized coefficient of B = -.309 (p = .007). Although not shown, the coefficient for the curvilinear LMX term is not found to be significant (p = .650). These results indicate that the relationship between LMX and emotional exhaustion is linear and negative. Hypothesis 1a is supported. The coefficient for the linear communication frequency term in model 3 is not found to be significant (p = .194). In model 4, the unstandardized coefficient terms for both the linear and quadratic communication frequency terms are significant (B = .631 with p = .028 and B = -.090 with p = .049, respectively). The communication frequency terms are not significant unless LMX is controlled for (p = .461 and p = .182, respectively). This indicates that the relationship between communication frequency and emotional exhaustion is

curvilinear with a predominantly positive but downward-sloping curve, but only when LMX is controlled for. The unstandardized coefficients for the product terms LMX × CF and LMX × CF² are found to be significant (B = .067 with p = .099, and B = -.018 with p = .012, respectively). The introduction of the interaction term LMX x CF² in model 6 results in an increase in the squared partial correlation of .057, and the *adjusted* R^2 change between the two models is .043. These results suggest that there is a linear LMX and emotional exhaustion relationship, a curvilinear communication frequency relationship and a curvilinear communication frequency by linear LMX interaction in the prediction of emotional exhaustion.

As a further check, the product terms were entered in a single step. The significance of the F change was .025, the increase in the squared partial correlation was .063 and the *adjusted* R^2 change was .043. It should be noted that, although the coefficient for the LMX × CF term is only on the border of significance in model 6 (p = .099), it would be a misspecification of the regression model to omit this term as higher-order terms only represent the effects they are intended to when the lower-order terms are partialed out (Aiken & West, 1991). Gender and tenure are not found to be significantly related to emotional exhaustion in any of the models. Although it is not significant in model 1, the unstandardized coefficient for the job pressure term is significant (B = .011 with p = .036) in model 6, indicating that the job pressure control is positively related to emotional exhaustion once LMX and communication frequency are controlled for.

No violation of assumptions is indicated from inspection of the probability plot and scatter plot of regression standardized residuals for each of the models in these analyses. While inspection of the Cook's distances and values of *DFBETA* indicates no effect of outliers on the results, Hair et al. (2006: 222) advise to be aware of instances where results would be substantially changed by deletion of a single or small number of cases. To confirm

if this was true for these analyses, the regressions were repeated with five cases removed that have Mahalanobis distances above the critical value estimated for a sample of 128 cases and 6 independent variables of 25.74 (Barnett and Lewis, 1978; cited in Stevens 1984: 342). The unstandardized coefficients for the product term LMX x CF² was still found to be significant (B = -.022, p = .052). The value of the squared partial correlation R^2 was .035, indicating a small effect size. The *adjusted* R^2 change between the two models declined to .023, which is above the lower limit of .020 suggested by Cohen et al. (2003: 211). This suggests that the finding of the curvilinear-linear interaction is not dependent on a small number of cases.

For the hierarchical regression analyses of the dependent variables depersonalization and reduced personal accomplishment, the control variables were entered in the first step. To test Hypotheses 1b and 1c, the linear LMX term was then added to each respective model in step 2. Although no hypotheses were proposed, to investigate the relationship between communication frequency and these two dimensions of burnout the communication frequency term was added in a third step. For depersonalization, one outlying case was detected and removed for the analyses. The results are shown in Table 3. As predicted, LMX is found to be negatively related to both depersonalization and reduced personal accomplishment (B = -.100 with p = .001 and B = -.231 with p = .051, respectively). Hypotheses 1b and 1c are supported. Communication frequency is significantly related to depersonalization (B = .132 with p = .029), but not to reduced personal accomplishment (p = .750). None of the control variables are significantly related to either depersonalization or reduced personal accomplishment.

[Insert Table 3 about here]

Post Hoc Analyses

We conducted post hoc probing of the linear LMX and curvilinear communication frequency relationships and linear by curvilinear interaction in the prediction of emotional

exhaustion using procedures outlined by Aiken and West (1991). Substituting the relevant coefficient values from model 6 and values for CF_M, CF_L, CF_H, LMX_L, and LMX_H (corresponding to values at the mean and at $\pm$ 1.0 standard deviation), we calculated the simple slopes for the equations for emotional exhaustion for the case of high and low-quality LMX relationships. The results are shown in Table 4. For the case of a low-quality LMX relationship at low communication frequency, the slope is almost horizontal. As communication frequency increases, as predicted, the gradient of the slope increases. For the case of a high-LMX relationship, the slope is curvilinear with an inverted U-shape. At low-communication frequency, the curve is upwards until a maximum value is reached. The curve then slopes progressively more steeply downwards as communication frequency increases.

To assist with interpretation, the curves for high and low-quality LMX relationships are plotted in Figure 1 for females who had worked for their manager for more than three months at the mean value of job pressure, for the range of communication frequency values observed.

[Insert Table 4 and Figure 1 about here]

DISCUSSION

As predicted, LMX was found to be negatively related to all three components of burnout. The study supports the assertion by Cherniss (1980) that an individual's relationship with their supervisor is important in the prediction of burnout. The standardized coefficients for LMX in this study were similar in size and magnitude to each of the corresponding burnout components in the study of Bakker et al. (2005). As the participants in the Bakker et al. (2005) study were employees in a large institute for higher professional education in the

Netherlands, this paper reports the results from a useful additional study, to the limited number of previous studies, and provides support for the generalizability of the earlier results.

The relationship between communication frequency and emotional exhaustion was found to be curvilinear, and LMX and communication frequency were found to interact in the prediction of burnout. As can be seen from Table 4 and Figure 1, the curve for the low-quality LMX relationship is predominantly positive with an increasingly steep upward slope. This supports the argument that as the frequency of unpleasant contact with the supervisor increases, individuals consume more personal resources and the rate of increase of emotional exhaustion increases as they become less able to replenish their internal resources. Hypothesis 2 is supported. The finding is consistent with that of Leiter and Maslach (1988), who in a study of nurses, support staff and their supervisors in a hospital found that unpleasant contact with the supervisor was an important source of interpersonal stress, playing a role in the development of emotional exhaustion.

For the case of employees in high-quality LMX relationships, the level of emotional exhaustion experienced was lower than that for employees in low-quality LMX relationships at all levels of communication frequency, providing evidence for the benefit of a high-LMX relationship for employee well-being. However, while the curve was as hypothesized at high levels of communication frequency, at lower levels this was not the case, with a slope that initially goes upward. The initial upward slope suggests that at lower levels of communication frequency the psychological costs and demands experienced by the employee outweigh the benefits and resources provided to the employee. We offer two possible explanations for the initial upward slope.

Firstly, Albrecht and Adelman (1987b) identify that problematic outcomes may often be present when supportive communication is attempted. They identify problems for the receiver of difficulties with impression and identity management as well as incurred relational costs,

all of which will act as demands on individuals' internal resources. For example, interactions with their manager may cause anxiety to employees due to concerns over the possibility or risk of their manager receiving an impression of them being weak or of the manager making negative judgements of their competence, abilities or attractiveness, which may have implications for their long-term relationship. In order to obtain their manager's continuing support, an employee may feel pressurized to mask her/his true feelings, and respond in ways that match the manager's expectations. If in the interaction the manager expresses an adverse opinion of the individual, such as a comment on a weakness, then the interaction may also prove costly in terms of the reduction in an employee's sense of personal control and self-worth. Albrecht and Adelman (1987b) suggest that even a slight concern that the manager's reaction may be negative can be stressful to employees. It seems reasonable to assume that these issues will be prevalent in high-quality LMX relationships, where the employee has more to lose, and at low communication frequency, where uncertainty is likely to be higher.

Secondly, prior research has shown that the dimensions of transformational leadership (see, for example, Bass & Avolio, 1994) of intellectual stimulation and high performance expectations increased role conflict in employees (Podsakoff, MacKenzie & Bommer, 1996) and that intellectual stimulation can lead to higher levels of burnout (Seltzer, Numerof & Bass, 1989). Research by Podsakoff, MacKenzie, Moorman and Fetter (1990) found that intellectual stimulation was negatively related to employee satisfaction, and commented that "although intellectual stimulation may produce desirable effects in the long run, it may be that in the short run, leaders who continually urge or exhort followers to search for new and better methods of doing things create ambiguity, conflict, or other forms of stress in the mind of the followers" (Podsakoff et al., 1990: 135). As prior research has found that LMX and transformational leadership are highly correlated (see, for example, Piccolo & Colquitt, 2006) and as it has been argued that leadership will be transactional in low-quality LMX

relationships and transformational in high-quality LMX relationships (Maslyn & Uhl-Bien, 2001), it seems likely that employees in high-quality LMX relationships may experience ambiguity, conflict, or other forms of stress. Hence, we suggest that for employees in a high-quality LMX relationship at low levels of communication frequency the slope is initially upward but later downward sloping due to employees experiencing demands as a result of issues of impression and identity management, incurred relational costs and higher levels of role conflict, ambiguity and stress, as their managers exhort them to search for new and better methods of doing things. As communication frequency increases, it appears that these issues reduce. And as the level of resources and support provided by the manager increase, the slope of the curve reduces and then starts sloping downward.

It should be noted that while the interaction terms were only able to explain a limited amount of additional variance in the dependent variable, this is consistent with the results of other studies. Frazier, Tix and Baron (2004) note that effect sizes for interactions are usually small, with increases in the squared partial correlation R^2 of around .02. Champoux and Peters (1987: 243) argue that "the increment in the R^2 should be viewed as an incomplete measure of the strength of moderator effects." We therefore suggest that the interactions in this study are interesting from a theoretical perspective, and provide important information of the presence and complexity of the interactions between the variables of communication frequency and LMX for the development of burnout. Moreover, although all three components of burnout are important, it has been argued that emotional exhaustion is the key dimension of burnout (Wright & Cropanzano, 1998), being the central variable for understanding the burnout process (Cordes & Dougherty, 1993; Cropanzano et al., 2003).

In previous research, job demand has predominantly been measured by self-report measures relating to individual's perceptions of whether the quantitative workload can be done in the time available (see, for example, the meta-analytical review of Cordes &

Dougherty, 1993). In this study, we attempted to use an external measure of performance achievement against target as a proxy for job pressure each respondent was subjected to. The job pressure variable was found to be positively related to emotional exhaustion, but not to depersonalization or reduced personal accomplishment. This is as expected from the job demands-resources model of burnout, which predicts that job demands are primarily and positively related to emotional exhaustion (Bakker et al., 2004), as well as from extensive prior research (see, for example, Bakker et al., 2005; Cordes & Dougherty, 1993) providing some support for the effectiveness of this proxy measure.

Although no hypotheses were made, the results indicate that communication frequency is related to emotional exhaustion with a predominantly positive, concave downward-sloping curve. This finding is consistent with Maslach's (1982) assertion that feedback is often poorly handled by managers and can be critical rather than useful or constructive, and with the research of Basch and Fisher (2000) that reported that personnel contact and interaction with their managers frequently led to feelings of disappointment, frustration, anger and hurt in employees. Moreover, the positive linear relationship between communication frequency and depersonalization can be explained by consideration of Leiter's (1993) process model of burnout. This model posits that depersonalization arises as a result of emotional exhaustion, with the effects of environmental factors on depersonalization being mediated by emotional exhaustion. As communication frequency was found to be predominantly positively related to emotional exhaustion, it follows that the relationship between depersonalization and communication frequency would also be positive. The finding of no significant relationship between reduced personal accomplishment and communication frequency is consistent with that of Leiter and Maslach (1988), who found that reduced personal accomplishment was not affected by either pleasant or unpleasant supervisor contact, as well as Leiter's (1993)

process model, which predicts that reduced personal accomplishment develops independently to emotional exhaustion and depersonalization.

Limitations and Directions for Future Research

The present study does have limitations which need to be noted. Firstly, as previously mentioned, while the proxy used for job pressure was obtained from published statistics, self-report measures were used for the other variables considered as it would have been difficult to obtain data on individuals' perceptions of the quality of their LMX relationship with their manager and their assessments of their levels of burnout from other sources. This means that common-method variance (Podsakoff & Organ, 1986) may have influenced the results. Reliance is placed on the comments of a number of authors who have commented that the common-method variance problem may be overstated (see, for example, Crampton & Wagner, 1994; Spector, 2006). It should also be noted that the questionnaire used conformed to a number of the procedural remedies to control for common-method variance as suggested by Podsakoff et al. (2003). Moreover, statistical investigation of each analysis did not indicate that common-method variance was a pervasive problem. Furthermore, it is unlikely that common-method variance could account for the curvilinear relationship and interaction effect found in this study.

Secondly, the study is cross-sectional. This does not allow determination of the direction of causality amongst the variables. As previous research has found that individuals under stress tend to avoid others (Buunk & Schaufeli, 1993) and become more negative, resulting in a decrease in supportive behavior by managers (van Dierendonck et al., 2004), it may be that an increase in burnout will also impact on the leader-member exchange relationship and communication frequency. Further research utilizing a longitudinal design would be required to determine causality amongst the variables.

Thirdly, as this study is of a single set of respondents, it may not be generalizable to individuals in other organizational contexts. Collection of data from other organizations and for employees at different hierarchical levels would provide further perspectives and insight into these relationships. Whether the interaction between LMX and communication frequency in the prediction of emotional exhaustion could be replicated, would be of particular interest. Further research into the reasons for the upward slope for employees in high-quality LMX relationships at low levels of communication frequency could provide useful insights.

Practical Implications

This study offers important straightforward practical implications for individuals, managers and organizations. The findings highlight the direct role played by managers in influencing burnout in their employees. LMX relationships are within the control of organizational members, and managers should take responsibility for the well-being of their employees. Managers need to be made aware that work demands and emotional demands may not result in higher levels of burnout if employees (a) have a high-quality relationship with their manager and (b) are provided with adequate resources (see also Bakker et al., 2005). They need to be aware of the impact that different styles of communication will have on employee well-being and of the psychological costs to employees when the need for higher performance is communicated, due to possible issues of impression and identity management as well as issues of uncertainty in interactions. Steps could be taken to adopt a positive communication style, to set clear agendas for meetings, to develop trust and to provide positive as well as negative feedback. Given the importance of burnout to both the individual and the organization, it is important that the existence and prevalence of burnout is recognized, and that the factors that influence its development are understood.

Conclusions

The central aim of this research is to provide an additional study to the relatively limited number that has considered relationships between leadership, communication frequency and burnout in the workplace. The results provide new insights into the importance of the leadership relationship and communication frequency between an employee and their manager. The study provides a theoretical logic and empirical evidence on how LMX and communication frequency interact to influence levels of employee burnout. The findings provide evidence to support the assertion of Buunk and Schaufeli (1993) that the social context of the workplace is an important factor for employee well-being and those of Cordes et al. (1997) and Maslach (1993) that interpersonal interactions are a key factor in the burnout process. Furthermore, the study contributes to the literature on LMX in that it provides an additional study to that of Kacmar et al. (2004) revealing that the importance of LMX is affected by the frequency of interaction for a new outcome of emotional exhaustion.

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TABLE 1: Univariate Statistics and Pearson Correlations among the Variables

Variable	Mean	s.d.	1	2	3	4	5	6	7
1. Gender			-						
2. Tenure			.11	-					
3. Job Pressure	120.1	14.5	-.02	-.02	-				
4. Leader-Member Exchange (LMX)	25.3	6.73	.02	-.06	.10	-			
5. Communication Frequency	9.95	3.59	-.02	-.02	.01	.44***	-		
6. Emotional Exhaustion	14.6	8.57	.06	-.01	.13	-.22*	-.00	-	
7. Depersonalization	1.73	2.52	.08	.18*	.09	-.28**	-.05	.33***	-
8. Reduced Personal Accomplishment	13.6	8.72	-.09	.02	.11	-.17 †	-.03	.15	.28**

N = 128. Gender was coded as 0 for female and 1 for male. Tenure was coded as 0 for more than three months and 1 for less than three months. Tests of significance were two-tailed.

† $p < .1$; * $p < .05$; ** $p < .01$; and *** $p < .001$.

TABLE 2: Regression Analyses for Dependent Variable Emotional Exhaustion

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gender	-1.659	-1.867	-1.986	-2.161	-1.974	-2.684
Tenure	-.387	-.852	-.884	-.986	-.1.094	.322
Job Pressure	.075	.089†	.092†	.085	.091	.110*
LMX		-.309**	-.381**	-.427**	-.388**	-.135
CF			.306	.631*	.656*	.897**
CF^2				-.090*	-.122*	-.080
LMX x CF					.040	.067†
LMX x CF^2						-.018*
F value	.795	2.480*	2.338*	2.659*	2.422*	3.045**
Sig. *F* Change	.499	.007	.194	.049	.319	.012
R^2	.020	.078	.091	.121	.128	.176
ΔR^2	.020	.058	.013	.030	.008	.048

Notes: $N = 128$. Unstandardized coefficients are reported for the respective regression steps. For the *F* value, the significance refers to the change in the *F* value between models.

† $p < .1$; * $p < .05$; ** $p < .01$; and *** $p < .001$.

TABLE 3: Regression Analyses for Dependent Variables Depersonalization and reduced Personal Accomplishment

	Depersonalization			Reduced Personal Accomplishment		
Variable	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**
Gender	-.437	-.504	-.555	2.547	2.392	2.361
Tenure	.340	.219	.175	1.068	.721	.713
Job Pressure	-.001	.003	.004	.067	.077	.078
LMX		-.100**	-.130***		-.231†	-.249†
CF			.132*			.078
F value	.256	3.119*	3.557**	.883	1.652	1.332
Sig. *F* Change	.857	.001	.029	.452	.051	.750
R^2	.006	.096	.133	.022	.053	.054
ΔR^2	.006	.090	.037	.022	.031	.001

Notes: $N = 127$ for the depersonalization analyses and 128 for the reduced personal accomplishment analyses. Unstandardized coefficients are reported for the respective regression steps.

For the *F* value, the significance refers to the change in the *F* value between models.

† $p < .1$; * $p < .05$; ** $p < .01$; and *** $p < .001$.

TABLE 4: Simple Slopes for the Equation for Linear LMX and Emotional Exhaustion Relationship, Curvilinear CF Relationship and a Curvilinear CF by Linear LMX Interaction

	CF_L = -3.59	CF_M = 0	CF_H = 3.59
LMX_L = -6.73	.148	.448	.748
LMX_H = 6.73	2.79	1.35	-.108

FIGURE 1. Interaction between Communication Frequency and LMX Predicting Emotional Exhaustion; (for regression of Emotional Exhaustion on Communication Frequency)