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The Interaction of Work Stressors and Organizational Sanctions on Cyberloafing*

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The Internet has changed the way organizations do business by offering rapid communication and enhanced information access and distribution. Further, the Internet enables organizations to decrease expenses, reduce product cycle times, and market goods and services more efficiently (Anandarajan *et al.*, 2000). However, along with these benefits, the Internet provides employees with a high-tech method of shirking their duties. Although employees have long found ways of shirking such as personal phone calls or trips to the water cooler, cyberloafing enables employees to avoid work duties using modern technology. Cyberloafing refers to employees' use of their employers' Internet access and email during work hours for non-work-related purposes (Lim, 2002). This can include emailing jokes, surfing non-work-related Internet sites, online shopping, instant messaging, posting to newsgroups, and downloading music.

Previous research investigating cyberloafing is primarily descriptive (an exception is Lim, 2002). These studies have examined the frequency that employees engage in cyberloafing and the type of Internet site visited (Lim *et al.*, 2002; Lim and Teo, 2005), as well as employer responses to cyberloafing such as Internet usage policies, monitoring software and filters, and discipline (e.g., Young and Case, 2004). Although description is a necessary first step when investigating a new construct, we believe it is time to move forward by investigating theoretical explanations for why employ-

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ees cyberloaf. Thus, the current study proposes that employees cyberloaf to cope with certain types of workplace stressors like role ambiguity and role conflict, but not others like role overload. Further, cyberloafing will be more likely to be used as a coping method when employees perceive there are few, if any, sanctions for doing so.

It is important to empirically study cyberloafing because of its prevalence and detrimental consequences. First, cyberloafing is convenient for U.S. employees as nearly 40% have Internet access at work (eMarketer, 2003). A survey by Vault.com (2000) indicates that almost 88% of respondents surf non-work-related websites during working hours, with 66% surfing anywhere between ten minutes and one hour in an average workday. Likewise, 82% of employees send non-work-related emails during work hours and nearly 87% receive them. Indeed, a recent survey found cyberloafing was the most common distraction at work (Malachowski, 2005).

Although cyberloafing can have positive effects (e.g., increased creativity; Block, 2001), it has the potential to be quite costly for employers who allow this behavior to continue unchecked. Like other methods of shirking, cyberloafing may reduce productivity by as much as 30 to 40 percent and can cost companies $54 billion annually (Conlin, 2000). However, unlike other types of shirking, employees can flood computing resources with their personal use, which leads to clogged bandwidth and degraded system performance (Sipior and Ward, 2002). Cyberloafing also exposes companies to legal liability in the form of harassment (e.g., employees emailing sexist or racist jokes to co-workers), copyright infringement (e.g., employees using clipart found on the Internet without permission), defamation (e.g., disgruntled workers posting lies about a manager in a chat room), and negligent hiring (e.g., an employee with a history of violence cyberstalking a customer). In summary, we believe it is important to research the antecedents of cyberloafing in order to predict its occurrence and, thus, reduce the negative outcomes often associated with it. Below we discuss our model of cyberloafing as well as the theoretical and empirical support for it.

Stressors and Cyberloafing

Stress is a normal psychophysical response to demanding or taxing events in the environment (Selye, 1974). Some amount of stress is needed for normal functioning; however, if high levels of stress are experienced repeatedly, negative consequences to well-being may result (e.g., increased blood pressure, job dissatisfaction, depression). The environmental demands are often referred to as stressors while the resulting consequences are referred to as strains. However, the presence of stressors does not guarantee the occurrence of strains. Many theories emphasize the importance of coping as an intervening variable in the relationship between stressors and strains (Hart *et al.*, 1993; Lazarus and Folkman, 1984). Strains that can potentially result from demanding stressors may be avoided with effective coping strategies. Thus, strain occurs only when individuals are unable to effectively cope with stressors in their environment.

We believe employees use cyberloafing to cope with stressors they experience at work. However, we are

not examining the effectiveness of cyberloafing as a coping device in the current study. As Folkman and Lazarus (1980) emphasize, it is critical to first show that stressors induce the need to cope before investigating the relationship between coping methods and strains. This study represents a first step in demonstrating the relationship between stressors, coping, and strains by exploring if work stressors trigger the need to cyberloaf. Below we discuss role theory as it relates to three common work stressors, cyberloafing as an emotion-focused coping method, and perceived organizational sanctions as a moderator between work stressors and cyberloafing.

According to role theory (Kahn *et al.*, 1964; Katz and Kahn, 1966, 1978), organizations can be viewed as a system of roles that relies on the appropriate assignment of job tasks to roles and employees' motivation to fulfill their assigned role. Employees are socialized into their designated role, given feedback on their success in carrying out their role, encouraged to make any necessary corrective adjustments to their performance, and sanctioned for failing to perform according to role expectations. Ideally, each role consists of a single recurrent activity. However, roles are often complicated by requiring employees to balance multiple, conflicting, or unclear roles (Katz and Kahn, 1978). These complications, or role stressors, induce tension, negatively affect work-related attitudes (Schaubroeck *et al.*, 1993), and hurt organizational effectiveness.

Kahn *et al.* (1964) outlined the types of role stressors that can interfere with employees' successful implementation of their roles. First, role ambiguity is defined as uncertainty regarding job duties and expectations, lack of guidelines for appropriate work behaviors, and unpredictability of behavioral outcomes (Rizzo *et al.*, 1970). Next, role conflict refers to incompatible demands in the workplace and can include conflicts between work demands and one's personal values, different supervisors' or workgroups' requests, and organizational policies and work duties (Rizzo *et al.*, 1970). Finally, role overload is the extent that employees are required to do more work than can reasonably be expected in a given time period (Caplan, 1971).

Role ambiguity and role conflict have been extensively researched over the past forty years and identified as prevalent stressors across a variety of organizations as well as occupations. Meta-analytic evidence indicates that these stressors are detrimental to employee well-being, satisfaction at work, and job performance (Fisher and Gitelson, 1983; Jackson and Schuler, 1985; Tubre and Collins, 2000). Likewise, role overload has been linked to negative outcomes such as occupational injuries (Barling *et al.*, 2002), turnover (Isaksson and Johannson, 2003), and other forms of strain including job tension, job dissatisfaction and anxiety (Perrewé *et al.*, 2005). Thus, role theory and previous research indicate that these stressors should elicit the need for employees to activate coping mechanisms in order to avoid potential strains.

Coping refers to cognitive and behavioral attempts to manage stressors that are appraised as threatening to individual well-being (Lazarus and Folkman, 1984). There are two categories of coping methods: problem-focused and emotion-focused. Problem-focused methods target altering

or managing stressors perceived as demanding and include things like gathering information, generating solutions, forming a plan of action, drawing on past experience, or increasing effort. Conversely, emotion-focused coping attempts to deal with or reduce distressful emotions associated with demanding stressors (e.g., ignoring problems, hoping for a miracle, praying, sleeping, distancing oneself from the stressors). Cyberloafing can be characterized as an emotion-focused coping method and, specifically, an escape-avoidance coping strategy. Escape-avoidance methods emphasize avoiding or escaping from stressors through behavioral techniques such as sleeping, eating, drinking, smoking, or using controlled substances (Folkman *et al.*, 1986). Cyberloafing is another behavior that enables employees to temporarily escape from work stressors and, thus, reduce distressful emotions associated with them.

However, we believe that cyberloafing will not be used to cope with all types of stressors. Specifically, it should be a coping mechanism for role ambiguity and role conflict, but not role overload. Both role ambiguity and conflict generate uncertainty as to what is expected from employees (Rizzo *et al.*, 1970). With the former, there is a lack of guidelines as to what constitutes appropriate behavior at work, thus opening the door for cyberloafing as a type of coping mechanism. Likewise, role conflict creates uncertainty through the many conflicting demands and expectations imposed on employees, which can signal that there are exceptions to the rules. This again facilitates the use of cyberloafing in response to these work stressors as employees may not see it as explicitly forbidden given the uncertainty resulting from these stressors. Previous research provides some support for employee use of cyberloafing to manage role ambiguity and role conflict. For example, a survey by Lim *et al.* (2002) found that 37% of participants believed that it is appropriate to cyberloaf if they are subjected to conflicting demands at work (high role conflict). Further, the majority of respondents (52%) admitted they would feel guilty for cyberloafing if their job duties were clearly defined (low role ambiguity).

Conversely, we expect that employees experiencing role overload will be less likely to cyberloaf because they simply do not have the time. Support for this assertion can be derived from a study by Strongman and Burt (2000) on break-taking. These authors found that the most common reasons for not taking a break or continuing with a task were lack of time, workload, and deadlines. Those who perceive role overload or not enough time to complete required tasks should be less likely to take the time to cyberloaf. Thus, we offer the following hypotheses.

Hypothesis 1: Role ambiguity will be positively related to cyberloafing.

Hypothesis 2: Role conflict will be positively related to cyberloafing.

Hypothesis 3: Role overload will be negatively related to cyberloafing.

Perceived Organizational Sanctions

Although we believe that role ambiguity and role conflict will stimulate the need to cope in employees, cyberloafing will be less likely to be used as a coping method if employees perceive that organizational sanctions are in place regarding cyberloafing. Social learning theory argues that individuals learn over time which be-

havioral responses they should engage by observing the behavior and resulting consequences of others in the workplace (Bandura, 1977). Behaviors that are observed as resulting in favorable or pleasant outcomes are likely to be repeated while behaviors believed to lead to unfavorable outcomes are not likely to recur. Thus, cyberloafing will be less likely to be evaluated as an appropriate mechanism to manage stress when employees perceive that there are organizational sanctions for doing so.

Survey research exploring organizational sanctions for cyberloafing is mostly descriptive. Studies on cyberloafing indicate the type of sanctions most likely to be used (e.g., American Management Association, 2003) as well as the degree that sanctions are perceived as effective (e.g., Young and Case, 2004) or favorable (Greenfield and Davis, 2002). Although the cyberloafing literature has not explored the link between perceived sanctions and subsequent cyberloafing, research on other counterproductive work behaviors suggests that perceived organizational sanctions are negatively related to behaviors such as theft, tardiness, on-the-job drinking or substance abuse, and slow or sloppy work (Hollinger and Clark, 1982). Indeed, employees who do not perceive severe sanctions for theft are almost twice as likely to report high levels of participation in theft from their employer (Hollinger and Clark, 1983). Previous research has explored the main effects of perceived organizational sanctions on counterproductive employee behavior; however, we extend this research by examining organizational sanctions as a moderating variable. That is, employees will be more reluctant to use cyberloafing as a means of coping with role ambiguity and role conflict when they perceive that there are sanctions against this behavior. However, we do not anticipate an interaction between role overload and perceived sanctions because employees are unlikely to use cyberloafing to cope with role overload given the nature of this stressor, regardless of the level of sanctions.

Hypothesis 4: Perceived organizational sanctions will be negatively related to cyberloafing.

Hypothesis 5: Perceived organizational sanctions will moderate the relationship between work stressors (role ambiguity and role conflict) and cyberloafing; stressors will be more positively related to cyberloafing when sanctions are perceived as unlikely.

METHOD

Procedures and Sample

Participants consisted of 194 employed MBA students at a southeastern university. To be eligible for the study, participants had to be employed at least part-time and have access to the Internet at work. Thirty-two surveys were omitted because of missing data or participants did not meet the eligibility criteria, which resulted in a final sample of 162. During class, participants completed a survey regarding their demographics, role stressors, perceived organizational sanctions for cyberloafing, and the frequency they engage in cyberloafing. Participation was voluntary, but as an incentive those completing the survey were given a raffle ticket for a drawing of a $25 gift certificate. The drawing took place immediately after completion of the survey so that no identifying information was collected, thus ensuring participants' anonymity.

Fifty-nine percent of the participants were male (N = 96) and the

average age was between 26 and 35 years. The majority of participants were white (80%), followed by African American (7%), Asian American (6%), other (5%), and Latino (2%). Most worked for companies with over 500 employees (64%) and had an average tenure of 4.38 years. Participants held a variety of jobs including supervisory (37%), financial (19%), accounting (14%), engineering (11%), miscellaneous (8%), information technology (6%), sales (3%), and education (2%).

Measures

Workplace Stressors. Role ambiguity and role conflict were measured using scales developed by Rizzo *et al.* (1970). The role ambiguity scale has six items and the role conflict scale has eight items. Role overload was measured by adapting Caplan's (1971) nine-item Subjective Quantitative Work Load scale. Items were coded so that higher scores reflect more role stress and were scored using a seven-point response scale ranging from 1 = very false to 7 = very true. Role ambiguity, conflict, and overload had coefficient alphas of .80, .78, and .87, respectively.

Perceived Organizational Sanctions. Participants indicated the likelihood of their employer administering six different sanctions in response to cyberloafing using a five-point scale ranging from 1 = very unlikely to 5 = very likely. Items were adapted from the American Management Association (2003) and included things like verbal or written warning, discipline, and taking away Internet/email privileges. This measure had a reliability coefficient of .83.

Cyberloafing. This measure contained eight items from Lim's (2002) cyberloafing scale and 14 that were generated by the authors after reviewing the cyberloafing literature (see Appendix). To minimize the possibility of employees reporting legitimate use of Internet and email systems (i.e., while on break, before or after work), we instructed them to only report personal computing use during regular working hours. Seven of the items were dropped from the current study because the majority of respondents indicated that they never engaged in that particular activity. Respondents used a five-point scale to specify the frequency they engaged in cyberloafing, ranging from 1 = never to 5 = a great deal. This scale had a coefficient alpha of .84.

Control Variables. Certain characteristics of the respondents were measured to ensure the relationships between the stressors and cyberloafing were not confounded. Past research suggests that males are more likely than females to abuse the Internet (Morahan-Martin, 2001), thus we controlled for gender. Likewise, we controlled for age as individuals in their late 20s to early 30s are more likely to use the Internet (Reed *et al.*, 2005) and engage in Internet abuse than older individuals (Morahan-Martin, 2001). Next, we controlled for tenure because research by Hollinger *et al.* (1992) found that employees with less tenure are more likely to commit counterproductive behaviors like theft. Internet experience was also measured as those who are more skilled at using the Internet use it more frequently, for longer periods of time, and with greater ease at work (Anandarajan *et al.*, 2000). Finally, the percent of time the Internet is needed to do employees' jobs was included because we expect that individuals who use the Internet regu-

larly will have greater opportunity to cyberloaf (Case and Young, 2002).

RESULTS

We performed a confirmatory factor analysis on the antecedents to determine if they measured distinct constructs. Our sample size precluded including the large number of cyberloafing items in this analysis. The results show that generally the data fit the model well with a χ^2 (371) = 638.62, $p < .001$, CFI = .92 and RMSEA = .07. Although the RMSEA is a little higher than optimal, it represents a reasonable error of approximation (Kline, 2005). Therefore, we continued our data analysis.

Descriptive statistics and correlations among the study variables are reported in Table 1. Correlational analyses indicate gender ($r = -.18$, $p < .05$) and age ($r = -.14$, $p < .05$) were negatively correlated with cyberloafing, while Internet experience ($r = .18$, $p < .05$) and percent of time Internet is needed to do job ($r = .20$, $p < .01$) were positively related. Role ambiguity was positively related to cyberloafing ($r = .17$, $p < .01$), and role overload ($r = -.26$, $p < .001$) and perceived organizational sanctions ($r = -.30$, $p < .001$) were negatively correlated with cyberloafing. Tenure and role conflict were not significantly related to cyberloafing.

Table 2 contains the hierarchical regression analysis used to test the hypotheses. The control variables were entered first, followed by the stressors in Step 2, organizational sanctions in Step 3, and the interaction terms in Step 4. The stressor and sanctions variables were centered before forming interaction terms and the multicollinearity diagnostics indicated that all variance inflation factor scores were below 10, which suggests that multicollinearity is not an issue (Myers, 1990). In Step 1, the control variables accounted for ten percent of the variance in cyberloafing ($p < .01$), with gender ($\beta = -.18$, $p < .05$) and percent of time Internet is needed to perform job ($\beta = .16$, $p < .05$) driving this effect. Thus, male employees or those who spend more time using the Internet to perform their jobs were more likely to cyberloaf.

As indicated in Step 2, the work stressors explained an additional 13 percent of the variance in cyberloafing ($p < .001$) beyond that attributed to the control variables. All three stressors were significant predictors of cyberloafing. Employees were more likely to cyberloaf when they perceived role ambiguity ($\beta = .21$, $p < .01$) or role conflict ($\beta = .20$, $p < .05$), which supports Hypotheses 1 and 2. In contrast, employees were less likely to cyberloaf when they perceived role overload ($\beta = -.38$, $p < .001$), thus supporting Hypothesis 3. Step 3 shows that sanctions contributed five percent in unique variance explained in cyberloafing ($p < .001$). Sanctions negatively predicted cyberloafing with employees less likely to participate in cyberloafing when they perceived organizational sanctions against it ($\beta = -.23$, $p < .01$), which supports Hypothesis 4.

Both of the predicted interactions were significant and added an additional eight percent of variance explained in cyberloafing ($p < .001$). As shown in the interaction plot (see Figure I), employees were more likely to respond to role ambiguity with cyberloafing when they did not perceive organizational sanctions against cyberloafing. A similar pattern emerged for role conflict (see Figure II). In addition to the plots, we used simple

Table 1
Descriptive Statistics, Variable Intercorrelations, and Scale Reliabilities

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Gender	.41	.49	----									
2. Age	1.96	.64	-.17*	----								
3. Tenure	4.38	4.22	-.04	.61***	----							
4. Experience	3.04	.70	-.30***	-.09	-.03	----						
5. Percent of Time Internet Needed for Job	26.85	26.48	-.01	-.15*	.01	.13	----					
6. Role Ambiguity	3.26	1.08	-.06	.04	-.03	-.03	-.10	(.80)				
7. Role Conflict	4.35	1.10	-.21**	.10	.09	.05	-.06	.35***	(.78)			
8. Role Overload	3.90	1.15	-.09	.24***	.09	-.08	.13*	.26***	.52***	(.87)		
9. Sanctions	2.08	.83	.06	.23**	.17*	-.12	.05	-.20**	-.02	.06	(.83)	
10. Cyberloafing	2.34	.66	-.18*	-.14*	-.04	.18*	.20**	.17*	.09	-.26***	-.30***	(.84)

N = 162. [a]Gender: 0 = male, 1 = female; Age: 1 = 18-25 years, 2 = 26-35 years, 3 = 36-45 years, 4 = 46-55 years, 5 = 56-65 years, 6 = over 65 years; Internet experience: 1 = beginner, 2 = intermediate, 3 = advanced, 4 = expert. Coefficient alphas are presented in the diagonal. *p < .05; **p < .01; ***p < .001.

Table 2
Results of Hierarchical Regression Analysis Predicting Cyberloafing

Variable	Cyberloafing					
	B	S.E.	β	t	R^2	ΔR^2
Step 1[a]					.10**	.10**
Gender	-.23	.11	-.18*	-2.13		
Age	-.17	.10	-.17	-1.65		
Tenure	.00	.00	.05	.54		
Percent of Time Internet Needed on Job	.00	.00	.16*	2.02		
Internet Experience	.09	.08	.09	1.13		
Step 2					.23***	.13***
Role Ambiguity	.13	.05	.21**	2.75		
Role Conflict	.12	.05	.20*	2.20		
Role Overload	-.22	.05	-.38***	-4.44		
Step 3					.28***	.05***
Sanctions	-.18	.06	-.23**	-3.13		
Step 4					.36***	.08***
Role Ambiguity x Sanctions	-.12	.06	-.16*	2.15		
Role Conflict x Sanctions	-.15	.05	-.22**	-3.03		

N = 162. [a]Gender: 0 = male, 1 = female; Age: 1 = 18-25 years, 2 = 26-35 years, 3 = 36-45 years, 4 = 46-55 years, 5 = 56-65 years, 6 = over 65 years; Internet experience: 1 = beginner, 2 = intermediate, 3 = advanced, 4 = expert. *p < .05; **p < .01; ***p < .001.

slope analysis to examine the nature of the interactions (Aiken and West, 1991). First, the regression equation was restructured to represent the regression of cyberloafing on role ambiguity and role conflict at low and high levels of perceived organizational sanctions. Low and high values of sanctions were computed as one standard deviation below the mean and one standard deviation above the mean, respectively. Then, the simple slopes of the equations were evaluated to determine if they differed from zero. Results indicated that role ambiguity ($\beta = .17$, $p = .003$) and role conflict ($\beta = .21$, $p = .001$) were only related to cyberloafing at lower

Figure I

Interaction between Role Ambiguity and Perceived Organizational Sanctions on Employee Cyberloafing

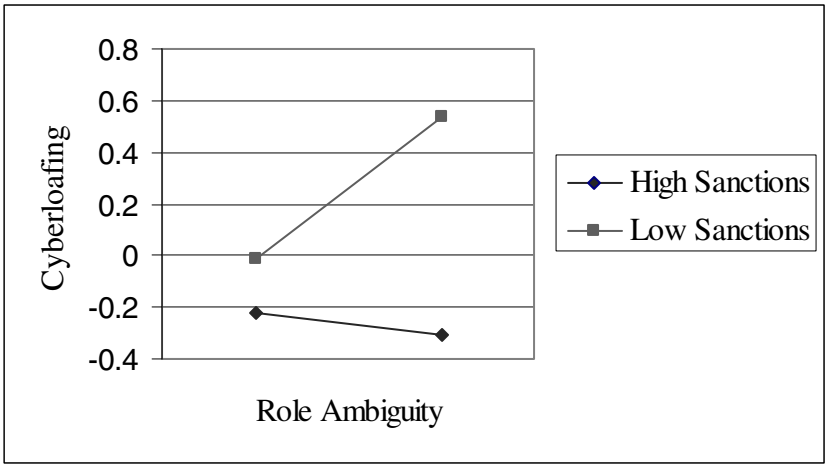
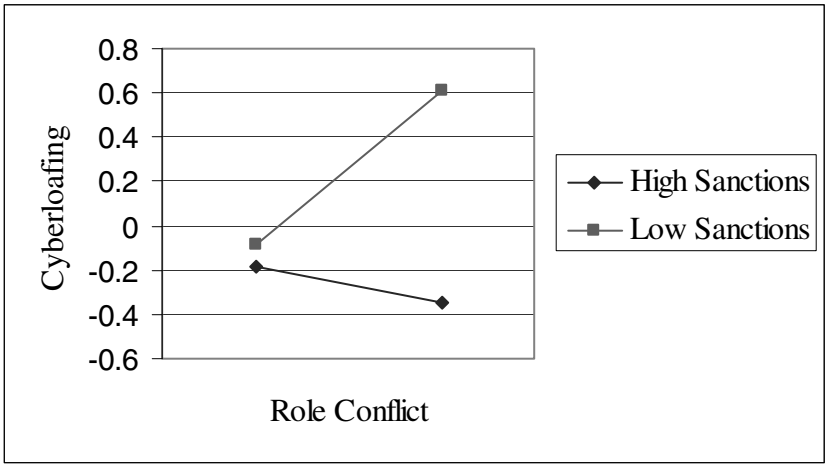


Figure II

Interaction between Role Conflict and Perceived Organizational Sanctions on Employee Cyberloafing



levels of organizational sanctions, but not at higher levels (β = -.03, p = .703; β = -.05, p = .524, respectively). In summary, Hypothesis 5 was supported.

Finally, we note that suppression is occurring in the relationship between role conflict and cyberloafing (Cohen and Cohen, 1983). The pairwise correlation between role conflict and cyberloafing approaches zero, but the regression weight is statistically significant. Systematically omitting one variable at a time from the regression equation revealed that role overload is acting as the suppressor. In addition, role conflict and role overload were highly correlated (r = .52, p < .001), which also supports the presence of suppression effects. Role overload removed variance reflecting the number of tasks required in a given time period from role conflict, which then revealed the real contribution of role conflict to cyberloafing (Tzelgov and Henik, 1991). Without role overload in the regression analysis, the relationship between role conflict and cyberloafing would have been underestimated (Cohen *et al.*, 2003). Although researchers have noted that suppressors tend to be sample-specific and thus may not generalize (Wiggins, 1973), we believe role overload acts as a productive suppressor because the interactions are significant and in the hypothesized form when role overload is removed from the analysis.

DISCUSSION

Despite the prevalence and costs of cyberloafing, previous research has almost exclusively focused on describing this behavior versus identifying its antecedents with the exception of the work by Lim (2002), which examined the relationship between organizational justice and cyberloafing. Although there are many potential antecedents of deviant work behaviors (e.g., personality traits, norms, attitudes, emotions), the current study expands the literature by empirically testing a theoretically-derived model in which cyberloafing is a method of coping with certain workplace stressors. Results indicated that when employees perceived more role ambiguity or role conflict they were more likely to respond with cyberloafing. Conversely, they were less likely to cyberloaf in response to role overload. However, employees were more likely to cyberloaf in response to these stressors when they perceived that organizational sanctions for cyberloafing were unlikely. The stressors and sanctions variables as well as their interactions added 26 percent of variance explained beyond that attributed to the control variables. It is important to note that the effect size for moderation in the current study is large compared to what is typically found in organizational research (Aguinis *et al.*, 2005).

Implications

Organizations that want to reduce cyberloafing should implement stress management programs. Although the complete removal of stressors is not feasible or desirable depending on the nature of the work, there are steps companies can take to reduce stressors. This study indicates that employees are more likely to cyberloaf when they perceive role ambiguity or conflict. Organizations can reduce role ambiguity by clarifying job expectations and duties through job analysis, job design, training programs, and performance appraisal

systems. With clear goals and expectations, employees are less likely to experience role ambiguity. Likewise, prioritizing work duties so employees know where to focus their efforts when conflicting demands arise may help reduce role conflict. Finally, organizations can also provide training for managers to improve their management skills (e.g., time management, scheduling, goal-setting, communication), thus reducing the role ambiguity and conflict their subordinates experience.

Although cyberloafing decreases with role overload, we caution against increasing this stressor as a way to reduce cyberloafing because having too much work is likely to be highly stressful for employees (Perrewé *et al.*, 2005). Instead, we focus on the other extreme of this relationship, that too little work is related to more cyberloafing. Our results suggest that when employees do not have enough work to do, they turn to cyberloafing as a means of passing time. Indeed, Sharma and Gupta (2003/2004) noted that increasing employees' work tasks may be an effective means of managing cyberloafing. Thus, organizations need to monitor not only for high stress levels, but also for low levels of workload if they wish to reduce cyberloafing.

Employers can also decrease cyberloafing by creating an electronic use policy prohibiting this behavior and imposing sanctions on employees breaching this policy. An electronic use policy should describe permissible and prohibited uses of email and the Internet at work, any monitoring or filtering software that will be used, and sanctions for violations (Flynn, 2001). Employees should also sign an acknowledgement that they received and read the policy. Next, as the current study suggests, the more likely sanctions for cyberloafing are perceived to be, the lower the likelihood of employees cyberloafing in response to stress in the workplace. However, a survey conducted by Websense (2002) found that less than 30 percent of surveyed companies discipline, give verbal or written warnings, or terminate employees caught cyberloafing.

Ironically, we must note a caveat in our recommendations, which assume that cyberloafing is undesirable. Although cyberloafing carries with it potential problems for organizations (e.g., decreased bandwidth, legal liability), these problems may be offset if it is a useful means of managing employee stress. As many as 82 percent of employees report feeling stressed at work (Marlin Company, 2001) and the American Institute of Stress estimates that stress costs U.S. organizations over $300 billion annually in reduced productivity and increased absenteeism, turnover, accidents, and medical and legal costs. Researchers have suggested that cyberloafing may be an effective way of escaping from work stressors (Block, 2001; Lavoie and Pychyl, 2001) and it can produce positive outcomes, including stimulating creativity and problem solving, making long work hours tolerable, and enhancing employee well-being (Oravec, 2002).

Thus, we paradoxically feel that organizations need to consider the trade-offs between the positive effects cyberloafing might have on employee well-being and productivity, and the serious liabilities associated with it. If future research demonstrates that cyberloafing is an effective means of coping with stressors in the workplace, employers with high stress jobs may have to consider tolerating some

amount of cyberloafing in order to negate the effects of stressors. Likewise, future research should explore the dimensionality of the cyberloafing construct. Some types of cyberloafing may be constructive in that they lead to the aforementioned positive outcomes (e.g., visiting bulletin boards may generate ideas for work-related issues) while other types may be destructive (e.g., viewing sexually explicit web sites).

Limitations and Future Research

As with any empirical study, the current one has limitations that must be acknowledged. First, the data were collected via self-reports and thus may be susceptible to common method bias. However, research shows self-reports are accurate measures of behavior (Spector, 1992) and that counterproductive work behaviors can be measured through self-reports if participants are guaranteed anonymity (Bennett and Robinson, 2000), which was provided in the current study. In addition, individuals are more likely to underreport participation in sensitive behaviors in order to impression manage or out of fear of getting caught (Lee, 1993), which suggests that our findings may be understated. Nevertheless, future studies may want to consider measuring employee cyberloafing through other methods such as monitoring software or peer reports.

Second, the data for this study are cross-sectional, which prevents causal interpretations regarding the study variables. Although our model is supported by theory and previous empirical work, future research should incorporate longitudinal designs to confirm the direction of the causal assumptions made regarding work stressors and cyberloafing in this study. In addition, our sample consisted of highly educated employees (all were pursuing graduate degrees). However, these participants may be the appropriate sample for examining cyberloafing given that they are more likely to have jobs with access to the Internet. Nevertheless, this study's findings should be replicated using more diverse samples to ensure the generalizability of the results. One interesting comparison may be between salaried and hourly employees. Given the overlap between work and non-work activities, especially for salaried employees, cyberloafing may be tolerated or even allowed in exchange for the long hours and increased productivity required of these workers.

Future research should also explore the specific circumstances under which cyberloafing is more likely to be used as a coping mechanism and how effective it is at preventing negative outcomes resulting from stressors. For instance, research shows that when individuals appraise stressors as threatening and believe little can be done to change the situation, emotion-focused coping methods are used (Folkman *et al.*, 1986). Conversely, threatening stressors perceived as controllable result in the use of problem-focused coping. Cyberloafing should be used as a coping method in situations that employees perceive as unchangeable (e.g., impending layoffs). Likewise, previous research suggests that some coping methods are more effective than others at reducing strains. For example, problem-focused methods such as problem solving are related to satisfactory outcomes and emotions (Folkman and Lazarus, 1988), while emotion-focused methods — like es-

capist coping — are associated with unsatisfactory outcomes and emotions (Zellars *et al.*, 2004). Cyberloafing may temporarily manage distressful emotions associated with work stressors, but it may not be an effective means to cope with them in the long run.

Another direction for future research is determining the role of co-worker sanctions in predicting cyberloafing. Hollinger and Clark (1982) found that informal co-worker sanctions, such as discouraging or avoiding the individual committing deviance or informing those in authority, carried more weight in reducing counterproductive work behaviors than did formal organizational sanctions. That is, employee counterproductivity was deterred more by perceived sanctions that could result from co-workers than from the employer. Further, the study suggests organizational sanctions indirectly affected counterproductivity by influencing co-worker reactions to these behaviors. Thus, future research should investigate not only organizational sanctions for cyberloafing, but also co-worker sanctions and the relationship between the two.

The Internet has changed the way businesses operate by enhancing global communication and information dissemination. Unfortunately, it also offers employees a convenient way of avoiding their job responsibilities. The current study expands our knowledge of the antecedents of cyberloafing by demonstrating that certain workplace stressors induce a need to cyberloaf while others do not. However, the occurrence of cyberloafing in response to work stressors is more likely when employees perceive that organizational sanctions for cyberloafing are unlikely. Employers seeking to minimize the use of cyberloafing as a coping method need to focus on reducing stressors through managerial practices such as job analysis, job design, training, and performance appraisal, as well as enforce strict sanctions for those caught cyberloafing.

APPENDIX

1. Checked non-work-related email†
2. Sent non-work-related email†
3. Received non-work-related email†
4. Visited general news sites†
5. Visited stock or investment-related web sites†
6. Checked online personals
7. Viewed sports-related web sites†
8. Visited banking or financial-related web sites
9. Shopped online for personal goods†
10. Visited online auction sites (e.g., Ebay)
11. Sent/received instant messaging
12. Participated in online games*
13. Participated in chat rooms*
14. Visited newsgroups or bulletin boards
15. Booked vacations/travel

16. Visited virtual communities*
17. Maintained a personal web page*
18. Downloaded music
19. Visited job hunting or employment-related sites
20. Visited gambling web sites*
21. Read blogs*
22. Viewed adult-oriented (sexually explicit) web sites*†

* Indicates items that were dropped from the current study.
† These items are from Lim (2002).

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