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## Social Loafing: A Field Investigation

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*Social loafing was investigated by testing a multilevel model among 23 intact work groups comprised of 168 employees representing two organizations. Results demonstrated that as hypothesized at the individual level, increases in task interdependence and decreases in task visibility and distributive justice were associated with greater occurrence of social loafing. At the group level, increased group size and decreased cohesiveness were related to increased levels of social loafing. Of particular interest was the finding that group member perceptions of perceived coworker loafing was associated with reduced social loafing, opposite of our predictions. We suggested that this unexpected finding may provide evidence of a social compensation effect.*  
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Extensive research has focused on the productivity levels of individuals in workplace settings. Coinciding with the increased prevalence of individuals working in groups (Cohen & Bailey, 1997), more research attention has been devoted to group productivity and group productivity loss (Ilgen, 1999). A widely accepted explanation for productivity losses has been the social loafing phenomenon (George, 1992). Social loafing is based on the de-individuation that can occur when people work in groups as opposed to working alone.

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Consciously or unconsciously, due to the decrease in social awareness that can occur in group settings, individuals may not exert as much effort in group settings as when they are alone (Ringelmann, 1913; Williams, Harkins & Latané, 1981). The implications of this finding for organizations that rely on groups to function and perform at levels superior to those of individual employees are considerable, making the identification of the antecedents of social loafing especially salient.

In an attempt to uncover an explanation for the social loafing phenomenon, pioneering research by Ingham, Levinger, Graves and Peckham (1974) ruled out difficulty in coordination. More recently, researchers have grounded their study of social loafing in motivation theories, and have identified a wide variety of potential antecedents, including: lack of identification of individual contributions to the group (Williams et al., 1981); lack of challenge and uniqueness of individual contribution (Harkins & Petty, 1982); low intrinsic involvement (Brickner, Harkins & Ostrom, 1986; George, 1992); individualistic orientation (Wagner, 1995); low group cohesiveness (Karau & Williams, 1997); and lack of peer appraisals (Druskat & Wolff, 1999). Despite differences in the specific antecedents of social loafing, there is agreement that the fundamental origins of social loafing are motivational (George, 1992; Sheppard, 1993; Wagner, 1995).

The purposes of the current research were threefold: The first purpose was to examine several key antecedents of social loafing simultaneously so as to shed light on the *relative* importance of the antecedents that have been linked to social loafing. Although many studies have been conducted on social loafing (Karau & Williams, 1993), antecedents have been examined in a piecemeal fashion. The second purpose was to address the fact that virtually all analyses in social loafing studies have been conducted at the individual- *or* the group-level of analysis. In addition to the need to examine multiple antecedents of social loafing, doing so with multilevel analyses is critical so that individual- and group-level antecedents of social loafing can be evaluated relative to one another. Extending social loafing research to include multilevel analyses is consistent with the general argument that scientific benefits may be reaped from multilevel research designs (Kozlowski & Klein, 2000; Rousseau, 1985).

The dominance of laboratory designs using student subjects in the vast majority of social loafing studies led to the third purpose of our study, which was to investigate social loafing in organizational settings with intact work groups. Although laboratory experiments were necessary for refining a theoretical framework of social loafing (Karau & Williams, 1993), field investigations are needed in order to determine the degree to which the results generalize to intact organizational work groups (Comer, 1995; George, 1992; Hollenbeck et al., 1995; Miles & Klein, 2002; Murphy, Wayne, Liden & Erdogan, 2003). In sum, the purpose of the current study was to simultaneously examine key individual- and group-level antecedents of social loafing among members of intact work groups in an organizational setting.

Although expectancy theory has been the dominant theoretical framework used to explain social loafing (Karau & Williams, 1993; Sheppard & Taylor, 1999), no one theory of motivation has been identified that fully captures the complexity of social loafing (Knoke, 1988, 1990; Sheppard, 1993). Thus, we relied on multiple theoretical perspectives in developing the rationale for our hypotheses. Our identification of the antecedents of social loafing was derived from Kidwell and Bennett's (1993) comprehensive model. Given the multi-level focus of our research, we categorized these antecedents as representing either

the individual level of analysis or the group-level of analysis. Specifically, individual-level antecedents of social loafing included the degree to which individuals felt that their jobs required close interaction with fellow group members (task interdependence), task visibility, and individuals' perceptions of distributive and procedural justice. Antecedents representing the group level were group size, cohesiveness, and perceptions of the prevalence of social loafing among members of the group. Based on Kidwell and Bennett (1993), we treated the dependent variable, social loafing, at the individual level.

### **Individual-Level Antecedents of Social Loafing**

#### *Task Interdependence*

Consistent with Shea and Guzzo's definition of task interdependence "as the degree of task-driven interaction among work group members" (Shea & Guzzo, 1987: 331), we operationalized task interdependence in terms of each group member's perception of the extent to which he or she needed to interact with other group members when working on tasks. This parallels Pearce and Gregerson's (1991) argument that although the interdependence of individuals within a group may be similar, it can vary a great deal. Thus, we contend that an individual's perception of the extent to which he/she must interact with others should be examined when considering the relation between task interdependence and individual social loafing.

As individuals perceive their tasks as being more interdependent, it may become increasingly difficult for them to feel a sense of personal achievement in one's work (Manz & Angle, 1986). Similarly, as contended by transactions cost economics, individuals have a strong incentive to withhold effort when conditions do not allow them to exhibit individually discrete accomplishments (Jones, 1984; Williamson, 1975). Consistent with these arguments, results of several laboratory studies (Harkins & Petty, 1982; Weldon & Gargano, 1988; Williams et al., 1981) showed identifiability to be negatively associated with social loafing. When the perception of task interdependence is high, individuals believe that their effort is indistinguishable from the effort put forth by their coworkers, and may feel that it is best to reduce effort given that opportunities for personal accomplishment are not forthcoming. On the other hand, when perceived task interdependence is low, individuals believe their effort can be isolated from the effort put forth by others, and thus feel that increased recognition for one's work makes it worth expending effort.

Contrary to these arguments, it may be contended that when task interdependence is high, other group members are more likely to notice when another member is loafing because that member's performance has more of an impact on fellow group members. Following this rationale, members may be less likely to engage in social loafing when task interdependence is high. But because we are focusing on individual perceptions of task interdependence and because laboratory research has found identifiability to be negatively associated with social loafing, we predict a positive relation between task interdependence and social loafing.

*Hypothesis 1a:* An individual's perception of the degree of task interdependence is positively related to that individual's social loafing.

### *Task Visibility*

Task visibility is an individual's belief that a supervisor is aware of one's effort (Kidwell & Bennett, 1993). When tasks are not highly visible by others, individuals may perceive no benefit from exerting high effort and no punishment from exerting low effort. The perception that individual work is not visible is also referred to as "hiding in the crowd" (Latané, Williams & Harkins, 1979).

A theoretical framework for social loafing based on degree of task visibility may be derived from expectancy theory of motivation (Vroom, 1964). Specifically, social loafing may be increasingly likely as individuals' perceptions of the relationship between performance and outcomes becomes less positive (Jones, 1984; Karau & Williams, 1993). Because performance-to-outcome perceptions should be less positive when task visibility is low, individuals are less motivated to put forth effort when they believe their individual efforts are less visible by the supervisor (George, 1992). That is, when individuals believe their effort is indistinguishable from the effort put forth by others, their performance-to-outcome expectancies (i.e., instrumentalities) drop. Conversely, when the perception of task visibility is high, individuals believe that their efforts are distinguishable from the efforts put forth by coworkers. Therefore, individuals will likely engage in social loafing when task visibility is low because neither an increase nor a decrease in effort will be noticed, and therefore neither a reward nor a sanction will result.

*Hypothesis 1b:* An individual's perception of the degree of task visibility is negatively related to that individual's social loafing.

### *Distributive Justice*

The perception of "fair pay" has played a significant role in the study of employee effort both in the fields of economics and organizational behavior. Fairness in the distribution of rewards/compensation has been shown to be negatively related to employees' social loafing in a number of studies in the economics literature. A main approach to distributive justice in economics, referred to as the efficiency wage hypothesis, indicates that individuals refrain from withholding effort for fear of being fired and losing wages (Lazear, 1979; Lazear & Rosen, 1981).

In the organizational behavior literature, distributive justice, or the belief that one is being paid according to their worth, has been shown to motivate individuals to put forth effort. Specifically, George (1995) found that social loafing was lowest under conditions of contingent rewards, consistent with theory on organizational justice. Given the theoretical link between organizational justice and equity theory (Folger, 1977; Greenberg, 1987; Tyler, 1994), this result also parallels Kidwell and Bennett's (1993) hypothesis that perceived equity and social loafing are negatively related. Taken together, these findings suggest that consistent with the social exchange approach to distributive justice (Tyler, 1994), individuals reduce their effort when they feel that they are not receiving an equitable amount of resources and/or rewards from the organization relative to their inputs.

*Hypothesis 1c:* An individual's perception of distributive justice is negatively related to that individual's social loafing.

### *Procedural Justice*

Whereas distributive justice refers to the fairness of the allocation of rewards, procedural justice captures perceptions of fairness in the procedures or policies used to make personnel decisions, such as determining the system for distributing rewards (Thibaut & Walker, 1975). Individuals' perceptions of the fairness of procedures may influence performance-to-outcome expectancies and thus influence the level of effort expended on task behaviors (Karau & Williams, 1993). George (1995) found that non-contingent punishment from supervisors was positively related to social loafing, but contingent reward was negatively related to social loafing. These findings suggest the salience of procedural justice in individual decisions regarding the degree of effort to expend on tasks. This is because individuals tend to perceive rewards based on work contributions as being procedurally fair, but punishment that is not based on work behaviors is perceived as procedurally unfair. Further suggestive evidence of the importance of procedural justice to social loafing may be derived from results of a meta-analysis demonstrating a positive relation between procedural justice and job performance (Colquitt, Conlon, Wesson, Porter & Ng, 2001).

*Hypothesis 1d:* An individual's perception of procedural justice is negatively related to that individual's social loafing.

## **Group-Level Antecedents of Social Loafing**

### *Work Group Size*

As a group increases in size, individual anonymity also increases. This increase in anonymity makes it more difficult to assess each individual's contributions (Jones, 1984). The presence of others has also been shown to facilitate feelings of unaccountability (Garcia, Weaver, Moskowitz & Darley, 2002). Consciously or unconsciously, individuals may withhold effort when they perceive that doing so will not affect their outcomes (Karau & Williams, 1993). Therefore, individuals will withhold effort, achieve identical rewards, and calculate greater benefits with lower cost. Although such conscious reduction of effort is possible, in some cases individuals may simply not be aware of the effort they are expending when part of a large group, and thus, any reduction in effort may be unintentional. Laboratory experiments have shown that increasing the number of participants working on the same task led to a reduction in average individual effort (Harkins, Latané & Williams, 1980; Harkins & Petty, 1982; Ingham et al., 1974; Kerr & Bruun, 1981; Sorokin, Hays & West, 2001). It appears that as group size increases, it becomes more difficult for individuals to encourage, as well as monitor, one another (Hechter, 1987). This lack of feedback and support also may contribute to social loafing.

*Hypothesis 2a:* The size of a work group is positively related to social loafing.

### *Group Cohesiveness*

Group cohesiveness, defined as the degree to which members are attracted to one another and desire to “stick” together (Mudrack, 1989), has long been recognized as a salient variable with respect to social loafing. If members do not like each other and do not feel that they are close-knit, they may be inclined to engage in social loafing. On the other hand, when members experience a sense of “we-ness” they may interpret social loafing as behavior that lets down fellow group members. Indeed, research has shown that cohesiveness tends to be negatively related to social loafing.

Most studies examining the association between cohesiveness and social loafing have been conducted in the lab using subjects who were strangers and have relied on manipulations of cohesiveness. However, in several studies length of time (if any) the subjects knew one another was used as a surrogate for group cohesiveness. For example, Karau and Williams (1997) operationalized group cohesiveness based on subjects’ labeling of others as close friends or strangers with the assumption that strangers assembled into a group would be less cohesive than would close friends. In a subsequent study, Karau and Hart (1998) operationalized cohesiveness based on attitudinal agreement by pairing strangers who reported agreeing strongly, disagreeing strongly, or disagreeing mildly on a topic. Social loafing was found to occur only in groups that were not cohesive or mildly cohesive. In the highly cohesive groups, members were found to work equally hard collectively as they did individually (Karau & Hart, 1998).

Validity was enhanced in a field study using actual student project teams and directly asking group members to rate the group on cohesiveness, rather than relying on a manipulation of cohesiveness (Mulvey & Klein, 1998). Using an aggregated cohesiveness measure for each student group, a significant negative correlation was found between cohesiveness and group performance, consistent with results of previous experimental studies. Despite the support found for a negative relation between cohesiveness and social loafing (Karau & Hart, 1998; Karau & Williams, 1997; Mulvey & Klein, 1998; Williams & Sommer, 1997), these studies were limited in that they tested few alternative explanations for the results. In the current investigation, cohesiveness was examined along with a wider range of possible determinants of social loafing in an organizational field setting involving members of intact work groups. Given the consistency with which a negative association between cohesiveness and social loafing has been found in experimental studies, we expected that cohesiveness would also be negatively related to social loafing in an organizational setting. We felt that this effect would hold even when tested along with group size. Although size tends to be negatively related to cohesiveness (Shaw, 1981), we expected that due to the pervasiveness of cohesiveness effects in previous research and given the moderate size of the groups in our sample (average of 10), cohesiveness would be significantly and negatively related to social loafing, even when tested in a multivariate model including group size.

*Hypothesis 2b:* Group cohesiveness, aggregated to the group level, is negatively related to social loafing.

### *Perceived Coworker Loafing*

Perceived coworker loafing refers to the extent to which group members feel that one or more coworkers engage in social loafing (Comer, 1995). Regardless of actual behavior, it is the perception of coworker loafing that is salient (Mulvey & Klein, 1998). Employees typically observe the behavior of others, and this tends to influence their own behavior (Mitchell, Rothman & Liden, 1985). The guide for their behavior is derived from the perceived action or inaction of their fellow group members. It follows that individuals who suspect others of social loafing will be more likely to engage in social loafing themselves. Consistent with this argument, a study by Schnake (1991) demonstrated that when group members believe that others are withholding effort, they are more inclined to withhold their own effort in order to avoid being taken for a “sucker.” Consistent with this finding, Mulvey and his colleagues, in two investigations (Mulvey, Bowes-Sperry & Klein, 1998; Mulvey & Klein, 1998) found a negative correlation between perceived loafing among teammates and task performance. Similarly, Robinson and O’Leary-Kelly found a positive relation between the level of antisocial behavior exhibited by coworkers, such as “did work badly, incorrectly, or slowly on purpose” (Robinson & O’Leary-Kelly, 1998: 663), and an individual’s own antisocial behavior. Finally, it has been found in multiple levels of a financial services organization that employee perceptions of the extent to which other members of their work teams do their share of the work is positively related to effectiveness measures (Campion, Medsker & Higgs, 1993; Campion, Papper & Medsker, 1996).

*Hypothesis 2c:* Perceived coworker loafing, aggregated to the group level, is positively related to social loafing.

## **Methods**

### *Participants*

Employees and their immediate superiors representing two large organizations engaged in global operations participated in the research. One organization produces electronics and computer equipment and the other produces heavy machinery. Both organizations are headquartered in the Midwest. In the organizations studied, all individuals within a work group reported to the same supervisor. In addition, individuals within each work group were located in the same facility and interacted with each other in order to perform their jobs. Participation in the study was voluntary. Respondents held lower-level positions in a variety of departments including distribution, maintenance, and production. In both organizations, employees were evaluated annually and rewards were based on individual performance. The direct manager determined the employee’s rewards based on a subjective evaluation of the individual’s performance.

The sample consisted of 168 employees (35 from the electronics firm and 133 from the machinery producing firm). The employee response rate was 50%. The average age of employees was 43.3, and they averaged 18 years with the organization. They were

76% male, 82.1% White, 6.5% African-American, 4.8% Hispanic/Latino-American, 4.2% Asian-American, and 2.4% wished not to reveal their race/ethnicity. In terms of educational background, 1.2% had a grade school diploma, 47.6% had a high school degree, 19% had an associates degree, 23.2% had an undergraduate degree, 6% had a post-graduate degree, and 3% chose not to respond.

Managers were interviewed regarding employee performance, organizational citizenship behavior (OCB), social loafing, and group size. The sample consisted of 23 managers (5 from the electronics firm and 18 from the machinery producing firm). The manager response rate was 79.3%. The average age of managers was 43.5, and they averaged 19.7 years with the organization. They were 91% male, 94.6% White, 2.4% African-American, and 3.0% Hispanic/Latino-American. In terms of educational background, 28% had a high school degree, 18.4% had an associates' degree, 38.1% had an undergraduate degree, and 15.5% had a post-graduate degree.

### *Procedure*

Data were collected at the participating organizations during work hours. At both companies, sessions for employees to complete the surveys were scheduled over a two-day period. Close-ended, structured interviews were scheduled with managers individually on the third day. All employee survey administrations and manager interviews were conducted by members of our research team. Participants were informed that the study was designed to examine work group effectiveness. Employees responded to questionnaires that included measures of the antecedents of social loafing. Specifically, employees completed measures of task interdependence, task visibility, distributive justice, procedural justice, cohesiveness, and perceived coworker loafing. Managers participated in close-ended, structured interviews. In addition to indicating the size of their work group, managers responded to items measuring individual performance, OCB, and social loafing for each employee in their work group. Performance and OCB were included in order to examine whether they were distinct from social loafing.

During the data collection sessions, subordinates were given a consent form and a survey. The survey had a survey number on it. When subordinates completed the consent form, they noted their survey number. Before completing the survey, the consent form was detached from the survey and given to the researcher. Thus, we were able to match manager interview and subordinate survey data. When managers rated individual subordinates during the interviews, they were given a form that listed each subordinate's name. We assured respondents of the confidentiality of their responses. As a number of measures were examined at the group level, we estimated within-group interrater reliability using James, Demaree and Wolf (1984). Groups found to have no interrater reliability (i.e.,  $r_{wg} = .0$ ) were removed from the data set and were not included in the analyses.

### *Measures: Individual Level*

*Task interdependence.* Five items from Pearce and Gregersen (1991) were used to assess task interdependence. The five items were scaled 1 = Strongly disagree to 7 = Strongly agree and were summed to form a composite ( $\alpha = .86$ ). Example items include, "I frequently

must coordinate my efforts with others in my work group” and “My work requires me to consult with others fairly frequently.”

*Task visibility.* Six items were used to assess task visibility (George, 1992). The items were scaled 1 = Strongly disagree to 7 = Strongly agree and were summed to form a composite ( $\alpha = .83$ ). Example items include, “My manager is aware of the amount of work I do” and “My manager would probably notice if I was slacking off.”

*Distributive justice.* We adapted five items from Welbourne, Balkin and Gomez-Mejia (1995) to assess employees’ perceptions of fairness with their pay. All items were scaled 1 = Strongly disagree to 7 = Strongly agree and were summed to form a composite ( $\alpha = .95$ ). Example items include, “The amount of my pay is fair” and “My pay is fair compared to what members of my work group are getting.”

*Procedural justice.* Seven items adapted from Welbourne et al. (1995) were used to assess employees’ perceptions of fairness with the organization’s pay system. All items were scaled 1 = Strongly disagree to 7 = Strongly agree and were summed to form a composite ( $\alpha = .89$ ). Example items include, “The design of the pay system seems fair” and “The rules used for determining the pay for all group members are fair.”

#### *Measures: Group Level*

*Group size.* Managers reported the number of members in each work group. We verified these numbers from a formal organizational chart.

*Cohesiveness.* Three items from O’Reilly, Caldwell and Barnett (1989) were used to assess cohesiveness and were scaled 1 = Very poor to 7 = Outstanding and were summed to form a composite ( $\alpha = .89$ ). Example items include “How well do group members get along together?” and “How well do you feel group members help each other on the job?” Additionally, the median estimate of within-group interrater reliability ( $r_{wg}$ : based on James et al., 1984) was found to be .90, while the mean  $r_{wg}$  was .88; also, the intra-class correlation coefficient  $ICC(1) = .84$  and  $ICC(2) = .99$ .

*Perceived coworker loafing.* Nine of the 10 items developed by George (1992) were adapted to assess employee perceptions of the extent to which fellow group members tend to engage in social loafing. For example, the item “defers responsibilities he or she should assume to other salespeople” was modified to read “Some members of my immediate work group defer to other group members responsibilities they should assume.” The items were scaled 1 = Strongly disagree to 7 = Strongly agree and were summed to form a composite ( $\alpha = .96$ ). One of the items developed by George (1992), “avoids performing housekeeping tasks as much as possible,” was not included because the participants did not have “housekeeping tasks” associated with their jobs. Again, we estimated within-group interrater reliability, using James et al.’s, 1984 formula, and found the median  $r_{wg}$  estimate to be .82 and the mean  $r_{wg}$  to be .78; also, the  $ICC(1) = .76$  and the  $ICC(2) = .99$ .

### *Measures: Dependent*

*Social loafing.* Managers responded to six items from George's (1992) 10-item social loafing measure. Because of time constraints for the manager interview, we used the six items that were the most relevant to the jobs represented in our sample and thus, required minor modification. The items were scaled 1 = Not at all characteristic to 5 = Very characteristic and were summed to form a composite ( $\alpha = .93$ ). The items include "Defers responsibilities he or she should assume to other group members," "Puts forth less effort on the job when other group members are around to do the work," "Does not do his or her share of the work," "Spends less time helping other departments or customers if other group members are present to help," "Puts forth less effort than other group members of his or her work group," and "Takes it easy if other group members are around to do the work."

### *Measures for Testing the Construct Validity of the Dependent Variable*

*Performance.* Managers rated each subordinate on seven items assessing cooperation, communication, planning and organization, technical competence, quantity of work, quality of work, and overall job performance. Items, all scaled from 1 = Not acceptable to 5 = Superior/exceptional, were summed to form a composite ( $\alpha = .89$ ).

*Organizational citizenship behavior (OCB).* Managers responded to three items assessing extra role behaviors from Smith, Organ and Near (1983) as adapted by Wayne, Shore and Liden (1997). The items were, "This group member . . . (1) volunteers to do things not formally required by the job; (2) assists me with my duties when needed even though it may not be formally required; and (3) helps others when their work load increases even though it may not be formally required by the job." These items, all scaled 1 = Not at all characteristic to 5 = Very characteristic, were summed to form a composite ( $\alpha = .80$ ).

## **Results**

Descriptive statistics and correlations among individual and group level variables appear in Tables 1 and 2, respectively.

Prior to testing the hypotheses, we examined the construct validity of the social loafing measure by testing whether it was distinct from performance and OCB. We conducted a principal components analysis with the social loafing, performance, and OCB items. Three factors emerged: The factor consisting of the social loafing items explained 48.9% of the variance, the second factor consisting of the OCB items explained 14.2%, and the third factor consisting of the performance items explained 6.8% of the variance. In order to better interpret factor loadings, varimax rotation was used. All items loaded above .50 on their intended factors and loaded less than .40 on the other factors.

Although social loafing was distinct from performance and OCB, we expected that social loafing would be significantly and negatively correlated with performance and OCB. As shown in Table 1, this was the case as the correlation between social loafing and OCB was  $-.41$  ( $p < .01$ ) and the correlation between social loafing and performance was  $-.64$

Table 1  
Descriptive statistics and correlations (individual level)<sup>a,b</sup>

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11
1. Social loafing (dependent)	1.93	.84	(.93)										
2. Organization (control)	–	–	.12	–									
Individual level													
3. Task interdependence	5.08	1.11	.01	–.14	(.86)								
4. Task visibility	4.54	1.12	–.24**	–.09	.36**	(.83)							
5. Distributive justice	4.06	1.59	–.14	–.10	.14	.27**	(.95)						
6. Procedural justice	3.46	1.22	–.15*	.03	.09	.34**	.56**	(.89)					
7. OCB <sup>c</sup>	3.15	.92	–.41**	–.19*	–.07	.21**	.15	.07	(.80)				
8. Performance <sup>c</sup>	3.31	.62	–.64**	–.30**	.00	.20**	.16*	.06	.65**	(.89)			
Group level													
9. Group size	11.44	4.47	.39**	.21**	–.03	–.12	.01	–.07	–.10	–.33**	–		
10. Cohesiveness	4.60	1.10	–.32**	–.36**	.20*	.33**	.12	.13	.20*	.19*	–.23**	(.89)	
11. Perceived coworker loafing	3.71	1.51	.10	.23**	–.05	–.26**	–.07	–.18*	–.01	–.08	.28**	–.50**	(.96)

<sup>a</sup> Cronbach's alpha is reported along the diagonal in parentheses.

<sup>b</sup>  $N = 168$ .

<sup>c</sup> Included to assess the validity of the social loafing measure.

\*  $p < .05$ .

\*\*  $p < .01$ .

Table 2  
Descriptive statistics and correlations (group level)<sup>a</sup>

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. Social loafing (dependent)	1.83	.63										
2. Organization (control)	1.22	.42	.20									
Individual level												
3. Task interdependence	5.04	.53	-.20	-.21								
4. Task visibility	4.55	.59	-.14	-.05	.48*							
5. Distributive justice	4.06	.69	-.27	-.28	.16	.22						
6. Procedural justice	3.54	.55	-.32	-.03	-.05	.09	.48*					
7. OCB <sup>b</sup>	3.18	.70	-.26	-.32	-.22	-.01	.25	.24				
8. Performance <sup>b</sup>	3.35	.47	-.58**	-.42*	.08	.11	.31	.19	.80**			
Group level												
9. Group size	10.26	4.60	.49*	.18	-.00	-.10	-.06	-.17	-.30	-.52*		
10. Cohesiveness	4.71	.68	-.58**	-.49*	.03	.28	.19	.05	.45*	.59**	-.25	
11. Perceived coworker loafing	3.59	.84	.43*	.33	.05	-.26	-.15	-.09	-.37	-.56**	.51*	-.61**

<sup>a</sup>  $N = 23$ .

<sup>b</sup> Included to assess the validity of the social loafing measure.

\*  $p < .05$ .

\*\*  $p < .01$ .

Table 3  
Results of the within-group hierarchical linear modeling analysis

Independent variables	Social loafing			
	Coefficient	S.E.	<i>t</i>	<i>p</i>
Intercept	1.83	.13	14.28	.00
Task interdependence (H1a)	.14	.06	2.24	.00
Task visibility (H1b)	−.16	.05	−3.29	.00
Distributive justice (H1c)	−.07	.03	−2.11	.05
Procedural justice (H1d)	.06	.04	1.51	.15

( $p < .01$ ). Although a correlation of  $-.64$  is relatively high, it does not indicate that the variables are redundant (Bollen & Hoyle, 1990; also see formula in McNemar, 1969, p. 185). The significance of these correlations supports the expected association between the quality of in- and extra-role behaviors executed on the job. However, the moderate magnitude of the social loafing and OCB correlation, combined with the factor analysis results, provide construct validity evidence for our social loafing measure.

Hierarchical linear modeling (HLM) was used to test our hypotheses. As noted elsewhere (e.g., Hofmann, 1997), HLM models allow for the concurrent examination of within- and between-group variance and the consideration of the role that contextual variables, such as those in our model, play on individual level variables. Our analysis involved the consideration of three models. The first model, referred to as the “null” model, is analogous to an analysis of variance in that it partitions variance in social loafing into within-workgroup ( $\sigma^2$ ) and between-workgroup ( $\tau$ ) components. The estimate of between-group variance is the intra-class correlation coefficient and is computed as the proportion of between groups over the total variance ( $\sigma^2 + \tau$ ). The results from this analysis indicate that 49.99% of the variance in employee social loafing is between groups. Clearly, there is justification to continue our analyses to investigate the degree to which both within- and between-workgroup variance in social loafing can be explained.

The second model tested is referred to as the “level-1” model, is essentially a within-group consideration of the relationship of the independent variables, measured at the individual level, that our hypotheses propose are related to manager assessments of employee social loafing. Specifically, we included task interdependence, task visibility, distributive justice, and procedural justice. The results from this analysis are presented in Table 3. As we hypothesized, task interdependence (H1a) is positively correlated with social loafing, and both task visibility (H1b) and distributive justice (H1c) are negatively correlated with social loafing. Procedural justice was found to be unrelated to social loafing, thus not supporting Hypothesis 1d. Additionally, the variance in social loafing explained by these variables can be computed following procedures outlined by Snijders and Bosker (1994). Essentially, the statistic compares the residual variance in this model with that obtained in the initial “null” model ( $(\sigma_{\text{null}}^2 - \sigma_{\text{level-1}}^2) / \sigma_{\text{null}}^2$ ). Our results indicate that our level-1 equation explains 21.81% of the within-group variance in managerial reports of employee social loafing.

The next model tested, the ‘intercepts as outcomes’ model, builds on the previous model through the inclusion of group-level-independent variables (cf. Hofmann, 1997; Kidwell, Mossholder & Bennett, 1997). Our interest is whether or not these group characteristics (i.e.,

Table 4  
Results of the between-group hierarchical linear modeling analysis

Independent variables	Social loafing			
	Coefficient	S.E.	<i>t</i>	<i>p</i>
Intercept	7.56	.71	10.70	.00
Organization	-.16	.15	-1.06	.31
Group size (H2a)	.06	.01	5.27	.00
Cohesiveness (H2b)	-.92	.10	-9.54	.00
Perceived coworker loafing (H2c)	-.49	.10	-4.77	.00

size, cohesiveness, and perceived coworker loafing) explain variance in manager reports of employee social loafing beyond that accounted for by our individual-level-independent variables. The within-group analysis reported above produces, for each group, intercept and slope coefficients to describe the relationships between the independent variables and manager reports of employee social loafing. To assess whether or not our group level measures influence social loafing, the intercepts as outcomes analysis uses the intercept terms from the level-1 within-group regression analysis as the level-2-dependent variable. Size, cohesiveness, and perceived coworker loafing, each a characteristic of a workgroup, are the level-2-independent variables. Following guidelines reported by Hofmann and Gavin (1998) for this type of model, we grand mean centered our level-1-independent variables. This means that the intercept term produced from the level-1 model, the dependent variable in this analysis, is interpreted as the amount of social loafing reported for an employee who is at the sample mean on the level-1-independent variables. A significant and positive level-2 coefficient for one of the group-level-independent variables would indicate that individuals who work in groups characterized by a higher amount of that construct were reported by their managers to engage in a higher amount of social loafing than would have been predicted based on their individual responses to the task interdependence, task visibility, and distributive justice measures. Because organization was significantly correlated with two of our group level measures, cohesiveness and perceived coworker loafing, it was included in this model as a control.

The results of the analysis are presented in Table 4. As predicted, group size (H2a) is positively correlated and cohesiveness (H2b) negatively correlated with an individual's social loafing. Opposite to our prediction, perceived coworker loafing (H2c) was found to be negatively related to manager reports of employee social loafing. Finally, it is possible to estimate the variance in social loafing explained by the level-2 model ( $(\tau_{\text{level}-1} - \tau_{\text{intercept}}) / \tau_{\text{level}-1}$ ). The analysis indicated that 30.72% of the between-group variance in social loafing is explained by the level-2 model.

## Discussion

In addition to the statistical significance for five of our seven hypotheses, practical significance was revealed by the substantial percentage of variance explained in both individual- (22%) and group-level (31%) HLM models. As predicted at the individual level, task

interdependence was positively related to social loafing, while task visibility and distributive justice were negatively related to social loafing. As predicted at the group level, group size was positively related and cohesiveness was negatively related to social loafing. The first purpose of our research, to simultaneously test multiple antecedents of social loafing that had previously been tested in a piecemeal fashion, demonstrated that even when tested in a multivariate model, all of the independent variables except procedural justice significantly predicted social loafing. This finding helps to increase our confidence in the results of previous studies that examined only one to three independent variables at a time.

Our second purpose, which was to examine social loafing with a multilevel research design, extends previous studies, most of which reported results at *either* the individual *or* the group level. Our results demonstrate that social loafing operates at both individual and group levels. Interestingly, group-level-independent variables in our study explained a substantial percentage of variance in social loafing after accounting for variance in individual-level-independent variables. Although this represents one of the key contributions of the current study to the literature, our results do not address the determinants and dynamics that caused the substantial effects for group-level variables. Future research is needed to explore the underlying causes of these effects.

Finally, our third purpose, which was to investigate social loafing in an organizational field study involving members of intact work groups, served to enhance the external validity of the many laboratory experiments involving student subjects working on simple tasks in temporary *ad hoc* groups (Comer, 1995; Miles & Klein, 2002).

Contrary to prediction, the coefficient for perceived coworker loafing was negative (not positive) in the prediction of social loafing. The social compensation hypothesis developed by Williams and Karau (1991) provides a likely explanation for this unexpected result. Specifically, Williams and Karau reasoned that individuals who view their group's task or goals to be of great importance or value, tend to work harder when they perceive that their coworkers are not able or motivated to do a good job. This may have been true of some of the employees in our sample. In essence, such individuals attempt to compensate for the lowered output of coworkers by working even harder. Williams and Karau (1991) further suggested that individuals may attempt to compensate for the weaknesses of coworkers either for their own personal gain (i.e., success of the group will benefit them personally) or for the altruistic reason that their efforts to compensate will benefit their less talented fellow coworkers.

### *Implications for Management*

Our results suggest that there are multiple factors related to social loafing at both the individual and group level that all need to be addressed by organizations. It is likely that organizations will recognize the need to foster group cohesiveness and to keep group size down to a minimum in combating social loafing. Less obvious, however, might be the need to acknowledge the role that task interdependence might play in encouraging social loafing, especially given the trend in organizations toward interdependent work teams. Our unexpected finding that perceived coworker loafing was associated with *less* social loafing points to the recommendation that organizations design jobs and work teams so that tasks and goals are meaningful and viewed as significant among employees (Hackman &

Oldham, 1976; Liden, Wayne & Sparrowe, 2000; Spreitzer, Kizilos & Nason, 1997). The more employees see their jobs and group's mission as significant and meaningful, the less likely they will be to engage in social loafing, and the more likely they will be to compensate for perceived substandard contributions of coworkers (Williams & Karau, 1991).

### *Strengths, Limitations, and Suggestions for Future Research*

A major strength of the current study was the simultaneous examination of social loafing predictors that have typically been studied in isolation. Another strong feature of our investigation was that external validity was enhanced by collecting data in a field setting from members of intact work groups representing two organizations. In fact, the current study is one of the few investigations to examine social loafing within intact work groups. Examining social loafing within intact work groups is essential for establishing whether the behavior of group members who work with one another daily in jobs representing their chosen occupations follows the same or different pattern as strangers assembled into groups within contrived settings for hour-long experiments engaged in novel tasks. The final strengths of our investigation were the multilevel research design and the collection of independent variables from group members and the dependent variable from managers, reducing the possibility of common method variance explanations for the results. Further reducing the possibility of common method variance was the use of both questionnaires and structured interviews for collecting the data.

A limitation of our investigation is its cross-sectional design, which restricts our ability to make causal inferences. Future research would benefit from a longitudinal design that can address issues of causality. Especially useful would be longitudinal studies in which social loafing is examined from the time that groups are formed.

Another limitation of the current study is that although two organizations participated in the study, to achieve greater generalizability, it would be necessary to include a larger number of diverse organizations. For example, because our sample consisted of groups of lower-level employees representing organizations engaged in production, it would be desirable to replicate our findings with mid- to upper-level teams in non-production organizations. Also, because all of the participants in our sample were rewarded based on their individual contributions, it would be desirable in future research to examine employees whose rewards are based exclusively or in part on team performance.

In addition, we suggest that future research investigate a larger sample of groups and obtain objective performance data as well as peer ratings to measure social loafing, rather than relying exclusively on relatively subjective supervisor ratings. This is because supervisory performance ratings may be biased due to a multitude of factors (Arvey & Murphy, 1998; Landy & Farr, 1980).

We recommend that procedural justice be examined with respect to social loafing in future investigations even though it was not significant when tested in a multivariate model in the current study. The simple correlation between social loafing and procedural justice was significant. However, procedural justice was not significant in the HLM model, which tested it along with significant independent variables, task visibility, task interdependence, and distributive justice. The fairly high correlation (.56) between distributive and procedural justice may have also contributed to the lack of significance of procedural justice in the HLM

model. It is possible that in other settings, procedural justice will play a stronger role in determining the extent to which individuals engage in social loafing.

Finally, as recommended by Viswesvaran and Ones (2000), research is needed to examine the relations and interactions between the dimensions of job performance. For example, how does social loafing correspond to deviant behaviors, such as retaliation? Although retaliation behaviors, such as “damaging equipment” or “wasting company materials,” tend to be more blatant and extreme than simply withholding effort, some forms of retaliation, such as “intentionally working slower” (Skarlicki & Folger, 1997: 438) overlap considerably with social loafing. Interestingly, Skarlicki and Folger (1997) found both types of retaliatory behaviors to load on the same factor. Although our factor analytic results indicated that social loafing factors separately from OCB, it might also be worthwhile to further investigate whether OCB and social loafing are separate dimensions of performance or end points of a single continuum.

In summary, we examined multiple antecedents of social loafing based on a motivation theory framework (Karau & Williams, 1993; Kidwell & Bennett, 1993). Testing a multiple-level model using HLM, we found support both for individual- and group-level antecedents of social loafing. The results serve to provide external validity to the many laboratory experiments that have been conducted on social loafing and to illustrate the complexity of the social loafing phenomenon. We hope that our study will provide the impetus for additional field research on social loafing that can further enhance our understanding of motivation and behavior at work.

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