

# Effects of Task Interdependence on the Relationship Between Helping Behavior and Group Performance

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The authors examine whether task interdependence moderates the relationship between the helping form of organizational citizenship behavior (OCB) and group performance. In a laboratory study, 62 groups with 3 members each completed a card-sequencing activity in which the level of task interdependence among group members was manipulated. Independent evaluators assessed helping by viewing videotapes of the groups' interactions during the sequencing activities. Performance was measured as a combined function of group speed and accuracy. Two prior field studies reported contradictory results regarding the impact of helping on group performance. Results from this study suggest that task interdependence may explain these results, and that the relationship between helping and group performance depends on the level of task interdependence required of group members.

*Keywords:* organizational citizenship behavior, group performance, task interdependence, control theory, laboratory experiment

Organizational citizenship behavior (OCB) has been one of the most extensively studied topics in the organizational behavior literature over the past 20 years (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Organ (1988) defined OCB as "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in aggregate promotes the effective functioning of the organization" (p. 4). The great interest in OCB appears to stem largely from the belief that these behaviors enhance organizational effectiveness (Podsakoff & MacKenzie, 1997), although comparatively little empirical research has been done to substantiate this belief (Koys, 2001; Podsakoff, Ahearne, & MacKenzie, 1997; Podsakoff & MacKenzie, 1994; Walz & Niehoff, 2000). Although Organ maintained that task interdependence (Thompson, 1967; Wageman, 1995) should affect the impact OCB has on unit performance, the issue of contextual moderation has received only indirect attention in the OCB literature (Bolino, Turnley, & Bloodgood, 2002; Podsakoff et al., 2000).

Contrary to the prevailing conventional wisdom (Borman & Motowidlo, 1993; Organ & Konovsky, 1989), available empirical evidence (Podsakoff & MacKenzie, 1994) suggests that in some contexts—specifically those characterized by lower levels of task interdependence—OCB may actually detract from unit-level performance. This is one of the arguments Podsakoff and his colleagues made to explain the negative relationship they found between helping behavior and unit-level performance in an insurance-sales context. Although interesting, this argument pro-

vides only indirect evidence of contextual effects. In the current study, we addressed the following question directly: Can task interdependence moderate the impact of member OCBs on group performance? To address this question, we tested the effects of task interdependence on the relationship between aggregated group-member OCB and objectively measured group-level performance outcomes in a laboratory experiment.

## Background and Hypotheses

The relationship between task interdependence and OCB has received increasing attention in the OCB literature the past several years (Bachrach, Powell, Bendoly, & Richey, 2006; Van der Vegt, Van de Vliert, & Oosterhof, 2003). Over time, various conceptions of interdependence have been reported. Some researchers (e.g., Johnson & Johnson, 1989) distinguished task from resource interdependence, and others (e.g., Van de Ven & Ferry, 1980) focused on the processes by which inputs are combined to create outputs. Thompson (1967) viewed interdependence as a characteristic of work, whereas Shea and Guzzo (1989) viewed interdependence as an attribute of employee behavior in the completion of their tasks. *Task interdependence*, as defined by Van der Vegt and Janssen (2003), is the extent to which employees depend on other members of their group to carry out work effectively (Brass, 1985; Kigundu, 1983). We adopted this definition for the current study.

In their explanation of the disparate effects of employee OCB on unit performance reported in the literature, Podsakoff et al. (2000) argued that the impact of OCB may be influenced by task interdependence. Quoting Organ (1988), Podsakoff et al. (1997) noted that "one would expect OCB to have more importance in connection with intensive . . . technologies, because . . . mutual dependencies among members . . . require spontaneous give-and-take [and] accommodating gestures among the parties in order to achieve effective coordination of their respective efforts" (p. 268). Consistent with Organ's (1988) argument, Podsakoff et al. (2000)

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concluded that, whereas activities characterized by high levels of task interdependence demand considerable cooperation among group members to accomplish these activities, little or no cooperative effort is required to accomplish activities characterized by lower levels of task interdependence. These arguments imply that the same behaviors that facilitate highly interdependent group processes may actually impede performance in less interdependent groups. We argue that this moderating effect may be a function of members' feelings of personal control (Liden, Wayne, & Bradway, 1997; Manz & Angle, 1986).

Specifically, theory on self-managed work groups proposes that decision-making autonomy within a group may enhance motivation and, consequently, group-level performance (Hackman & Oldham, 1976; J. A. Pearce & Ravlin, 1987). However, researchers using empirical studies to explore these relationships have reported inconsistent results: In some cases, they uncovered positive effects of control (Cohen & Ledford, 1994), and others found no effects (Wall, Kemp, Jackson, & Clegg, 1986). Liden et al. (1997) argued that these inconsistencies may be a function of task interdependence, observing that individuals who work independently may be demotivated by having to coordinate efforts and reach consensus in contexts where activities are more effectively managed at the individual level.

Just as members of low task interdependent groups forced to reach consensus may feel less important to the group and experience a loss of individual-level empowerment and control (Manz & Angle, 1986), helping behaviors in low task interdependence contexts also may be interpreted by members as taking away personal control over an independent task. For example, in these contexts, helping behaviors may be construed as feedback indicative of poor performance and a negative comment on one's ability to perform independently. As a result, members may feel threatened and characterize coworkers' helping behaviors as an encroachment on their personal performance domain. Therefore, consistent with the results reported by Liden et al. (1997), these member perceptions are expected to diminish motivation and, as a consequence, group performance.

These expectations are consistent with research that suggests that task interdependence may affect the manner in which the helping form of OCB contributes to measurable group-level performance. For example, in what was described by Podsakoff et al. (2000) as a highly interdependent task context, Podsakoff et al. (1997) reported that OCB was significantly positively related to the amount and quality of paper produced by paper mill work crews. In contrast, in what Podsakoff et al. (2000) described as a context characterized by low levels of task interdependence, Podsakoff and MacKenzie (1994) reported that the helping dimension of OCB was significantly negatively related to quantitative sales records among insurance agency units. Thus, the results from the empirical record are currently contradictory. Although Organ (1988) recognized the potential significance of unit member task interdependencies, no published empirical study has directly examined their effects on the relationship between OCB and group performance. However, the available empirical evidence coupled with the arguments of researchers in the field provides strong, indirect evidence that the nature of the interdependence required of group members should help predict the utility of OCB.

Furthermore, in addition to influencing the nature of the impact of OCB on group performance, task interdependence also should influence the absolute level of OCB demonstrated within a group through its effects on members' felt responsibility (J. L. Pearce & Gregersen, 1991). Specifically, OCB researchers (Anderson & Williams, 1996; Smith, Organ, & Near, 1983) for years have recognized that task interdependence may affect the incidence of OCB. J. L. Pearce and Gregersen demonstrated that this effect was a function of increased levels of felt responsibility in high task interdependence contexts. Consistent with the results reported by these researchers, task interdependence has been shown to increase group member communication (Johnson, 1973) as well as helping and information sharing (Crawford & Haaland, 1972). Task interdependence also may influence unit members' expectations of help (Thomas, 1957) as well as the development of norms of cooperation (Shaw, 1981) that make helping behaviors more likely to be demonstrated (Krebs, 1970), expected (Lam, Hui, & Law, 1999), and valued (Bachrach et al., 2006; Miller & Hamblin, 1963). Given the influence task interdependence has been predicted (Smith et al., 1983) and shown (J. L. Pearce & Gregersen, 1991) to have on the demonstration of OCB, we also expected more OCB in the high versus low task interdependence conditions in the current study.

Therefore, although OCB is predicted to have negative effects on group performance in the low task interdependence condition (Manz & Angle, 1986; Podsakoff & MacKenzie, 1994), group members in this condition should demonstrate fewer OCBs than group members in the high task interdependence condition (J. L. Pearce & Gregersen, 1991). In addition, because more OCBs will be demonstrated in the high versus low task interdependence condition, we predicted that the cumulative facilitative influence of helping in the high task interdependence condition will be stronger than the cumulative detractive influence of these same behaviors in the low task interdependence condition, resulting in a positive main effect of OCB across the two conditions.

On the basis of the arguments of Podsakoff et al. (2000), Manz and Angle (1986), and J. L. Pearce and Gregersen (1991), the pattern of relationships predicted in the current study is depicted graphically in Figure 1. A thin solid line represents the pattern of results generally expected by scholars in the field (Borman & Motowidlo, 1993; Organ & Konovsky, 1989). Consistent with general professional consensus, in the current study we also expected a positive main effect of OCB on group performance. Building on these arguments, we expected a strong positive effect of OCB in the high task interdependence condition but a negative effect in the low task interdependence condition. In the low task interdependence condition, helping behaviors will lead to diminished feelings of personal control and motivation, impeding group performance (Liden et al., 1997). In addition, those group members demonstrating helping behaviors will do so at the expense of completing their own tasks, further limiting the performance potential of the group. Thus, we proposed the following hypotheses:

*Hypothesis 1:* Helping behavior has a positive main effect on group performance across task interdependence conditions.

*Hypothesis 2:* Task interdependence moderates the effects of helping behavior on group performance, such that there is a

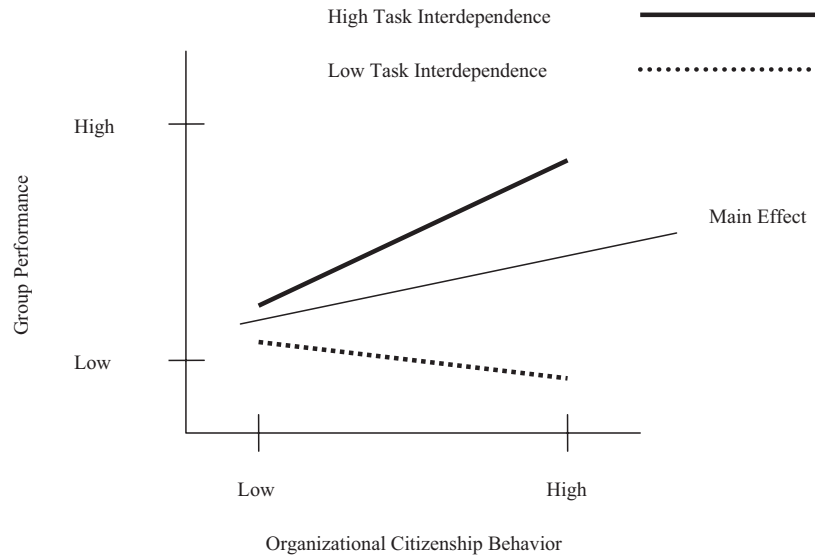


Figure 1. Hypothesized moderating effects of task interdependence on the relationship between organizational citizenship behavior and group-level performance outcomes.

positive effect in the high task interdependence condition and a negative effect in the low task interdependence condition.

## Method

To provide a rigorous investigation of these hypotheses, a laboratory study was conducted in which we manipulated the level of task interdependence among groups completing card sequences (Mahurin & Pirozzolo, 1993). Objective group performance was calculated as a standardized, aggregated function of sequencing accuracy and speed (Beersma et al., 2003). The independent variable in this study (OCB) was derived from independent assessments of group member helping (Podsakoff et al., 1997) provided by graduate student evaluators viewing videotapes of the groups' performances.

## Design and Research Participants

Business students ( $N = 186$ ) arrayed into 62 three-person groups participated in a card-sequencing competition at a major university in the southeastern United States. A mixed quasi-experimental design was used, with a measured helping variable and a manipulated task interdependence variable (high vs. low) serving as independent variables in this study. Participants averaged 21.34 years of age ( $SD = 3.12$ ), and 64% were men, with 3.17 years of undergraduate education ( $SD = 1.01$ ), 4.31 years of part-time work ( $SD = 3.99$ ), and 0.91 years of full-time work ( $SD = 2.37$ ) experience.

## Task and Objectives

In the card-sequencing competition, groups completed a modified version of the techniques used by Mahurin and Pirozzolo (1993). The current version of the activity was modified for groups of three members, using decks with three differently colored backs. Participants were given 1 hr to create complex card sequences conforming to specifications (Appendix A) that were provided to participants 2 weeks prior to their participation in the competition.

## Procedure and Experimental Manipulations

Participants recruited from the business school participated in the study for both extra course credit and an opportunity to win a \$1,500 cash prize. Each group was randomly assigned to either a high or low task interdependence condition prior to participating in the competition. At their scheduled time, participants came to the laboratory, were seated, and completed a precompetition survey. Participants were then shown an instruction video containing the study manipulation. At the conclusion of the activity, participants completed a postcompetition survey and were debriefed and released. A graphical representation of the structure of the task relationships used in the two conditions is shown in Appendix B. As this graphic illustrates, in the low task interdependence condition group members were each assigned their own stack of cards and responsibility for completing the five sequential tasks associated with that stack. Furthermore, these individuals were not allowed to physically aid in the processing of another member's cards. In contrast, all three members in the high task interdependence condition were required to work on a single stack of cards at a time. These groups had to complete the sequential tasks associated with each stack before processing subsequent stacks. Thus, these constraints required that members in the low task interdependence condition work on their own stack of cards in relative isolation, whereas group members in the high task interdependence condition were required to work on a communal stack of cards in conjunction with one another.

## Dependent Variable—Performance as a Function of Accuracy and Speed

Following the methodology reported by Beersma et al. (2003), group performance was calculated as an aggregated function of speed and accuracy in the completion of the tasks. Accuracy was evaluated by two independent scorers and was calculated as a ratio of the number of correctly sequenced cards by the total number possible. Interrater reliability was .94. Because there was an imposed time limit, speed was calculated as a ratio of total possible time divided by the time taken to complete all tasks. Speed and accuracy were calculated so that higher values reflected higher

performance and were then standardized and summed for a single performance score.

### Control Variables

Information about the number of hours participants spent practicing with cards and studying competition procedures was collected in a precompetition survey. Preparation was controlled using a weighted average of hours studying and practicing because preparation was expected to be a significant contributor to group success in the competition (Dyer, 1995).

## Results

### Manipulation Checks

Van der Vegt and Janssen's (2003) five-item scale was used to measure task interdependence. An example is, "Members of this group need information and advice from their colleagues to perform their jobs well." Responses to all items were based on a 7-point scale ranging from 1 (*highly disagree*) to 7 (*highly agree*), and scores were averaged across items to form each scale score. The reliability of the scale was  $\alpha = .89$ . Results from an independent-samples *t* test indicated that the high ( $M = 5.94$ ,  $SD = 0.89$ ) and low ( $M = 4.15$ ,  $SD = 1.45$ ) conditions were significantly different from each other,  $t(184) = 10.11$ ,  $p < .001$ , and in the expected direction. Participants completed this manipulation check immediately following participation in the competition.

### Independent Variable and Interrater Reliability

To increase validity in the measurement of the study's independent variable, two graduate student evaluators provided OCB ratings for each group member. A total of 16 evaluators provided ratings for the members of 7.75 groups ( $SD = 0.44$ ). Evaluators did not provide ratings across task interdependence conditions. To remain consistent with previous research assessing OCB in laboratory studies, OCB was measured using the Podsakoff et al. (1997) seven-item helping scale. Evaluators received training in the use of the scale and were instructed to answer all seven items for each participant. An example is, participants "take steps to prevent problems with other team members." Podsakoff et al. reported an  $\alpha$  of .95. The average interrater reliability for evaluations of helping was .69 (James, 1982).

### Tests for Appropriateness of Data Aggregation

Organ (1988) argued that the impact of OCBs primarily occurs as a result of their demonstration across individuals within groups. Consistent with this theoretical orientation, OCB ratings were collected for individual group members and were aggregated at the level of the group. That is, we created the group-level helping variable by averaging the scores given to each group member. To assess the reliability of these mean scores, ICC(1) and ICC(2) intraclass correlations were computed (James, 1982). These analyses revealed an ICC(1) of .32 and an ICC(2) of .58. These ICC values generally indicate reliable mean differences between groups, as well as acceptable levels of "agreement," providing support for the decision to aggregate this variable (Ostroff, 1993).

### Construct Means, Standard Deviations, Reliabilities, and Intercorrelations

Means, standard deviations, and correlations are reported in Table 1, as are two indices of construct reliability: (a) Cronbach's  $\alpha$  and (b) Fornell and Larcker's (1981)  $\rho_{vc(\eta)}$ . Evidence for construct reliability is indicated by the fact that the internal consistency for helping ( $\alpha = .96$ ) met Nunnally and Bernstein's (1994) recommended  $\alpha$  level of .70, and the  $\rho_{vc(\eta)}$  index was greater than Fornell and Larcker's recommended .50. The results indicate that helping accounts for just below 13% of the variance in group performance. However, this aggregated summary of the relationship between these two variables is somewhat misleading. Specifically, in the high task interdependence condition, the correlation between helping and group performance ( $r = .69$ ) was quite high, whereas there was no relationship between these two variables ( $r = -.03$ ) in the low task interdependence condition.

With respect to group performance, of the 62 groups participating in the competition, half finished the tasks in the allotted time. Of these, 23 groups were in the high and 8 were in the low task interdependence condition. Although there were significantly more "finishers" in the high task interdependence condition,  $\chi^2(1, N = 62) = 7.26$ ,  $p < .05$ , results from an independent-samples *t* test indicated an absence of mean differences in group performance,  $t(60) = 0.26$ , *ns*. This suggests that groups in the low task interdependence condition may have focused more on sequencing accuracy than speed, whereas groups in the high task interdependence condition focused more on speed than accuracy. We return to this issue in the Discussion section.

### Hypothesis Tests for the Moderating Effects of Task Interdependence

The results from hierarchical regression analysis conducted to test the study hypotheses are presented in Table 2. We argued that positive main effects of helping would occur because more OCB would be demonstrated in the high versus low task interdependence condition. Results from an independent-samples *t* test indicated that the levels of OCB in the high ( $M = 4.81$ ,  $SD = 0.95$ ) and low ( $M = 4.05$ ,  $SD = 0.87$ ) conditions were significantly different,  $t(60) = 3.26$ ,  $p < .005$ , and in the expected direction. Furthermore, as the results in Step 2 of Table 2 indicate, helping had a significant positive effect on performance ( $\beta = 0.26$ ,  $p < .05$ ), providing

Table 1  
Means, Standard Deviations, Internal Consistency Reliabilities,  
and Variable Correlations

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. Group performance	0.00	1.62	—			
2. Condition	0.50	0.50	.15	—		
3. Preparation	0.49	0.96	.35**	-.14	—	
4. Helping behavior	4.42	0.98	.36**	.39**	.19 (.96/.87)	—

Note. The first entry inside the parentheses is Cronbach's index of internal consistency reliability ( $\alpha$ ), and the second entry is Fornell and Larcker's (1981)  $\rho$ . Reliability estimates were not calculated for unit performance, condition, or preparation.

\*\*  $p < .01$ , one-tailed.

Table 2  
*Hierarchical Regression Analysis Regressing Group Performance on Organizational Citizenship Behavior Across Two Task Interdependence Conditions*

Variable	Group performance		
	Step 1	Step 2	Step 3
Condition	0.20	0.09	-1.53**
Preparation	0.38**	0.31**	0.31**
Helping behavior		0.26*	-0.12
Helping Behavior × Condition			1.82**
<i>R</i> <sup>2</sup>	0.16	0.21	0.32
<i>F</i> <sup>a</sup>	5.77**	5.34**	6.81***
Δ <i>R</i> <sup>2</sup> , Step 2		0.05	
Δ <i>R</i> <sup>2</sup> , Step 3			0.11
<i>F</i> for Δ <i>R</i> <sup>2</sup>		3.91*	9.02**

Note. Entries are standardized regression coefficients.  
<sup>a</sup> Degrees of freedom for Model 1 = (2, 59); Model 2 = (3, 58); Model 3 = (4, 57).  
 \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

support for Hypothesis 1. Evidence pertaining to moderating effects of task interdependence can be seen in Step 3 of Table 2. As the results in Step 3 indicate, there was a significant interaction between helping and condition ( $\beta = 1.82, p < .001$ ), providing support for Hypothesis 2. Regression analyses conducted to deter-

mine whether the relationship between helping and performance was significant under the high task interdependence condition provided support for the first part of Hypothesis 2 ( $\beta = 0.63, p < .001$ ). However, data from the low task interdependence condition indicated the presence of a nonmonotonic relationship between OCB and performance. To test for these effects and avoid problems with collinearity, helping was first mean-centered. Next, group performance was regressed on both mean-centered and squared mean-centered helping. Results from this analysis indicated that the squared helping term was significant ( $\beta = -0.37, p < .05$ ), suggesting that the effects of helping were nonmonotonic in the low task interdependence condition. As the scatterplot of performance and helping presented in Figure 2 suggests, although both low and high levels of helping may have detracted from the groups' ability to compete, a moderate level of citizenship behavior appears to have facilitated performance under conditions of low task interdependence.

Discussion

In the organizational behavior domain, there is a great deal of consensus that OCB may contribute to work group success. Building on the arguments of Organ (1988), Liden et al. (1997), and the a posteriori interpretation of several empirical findings reported in the literature (Podsakoff et al., 2000), we hypothesized in the current study that structural contingencies moderate the OCB-group performance relationship (Pennings, 1992). However, the

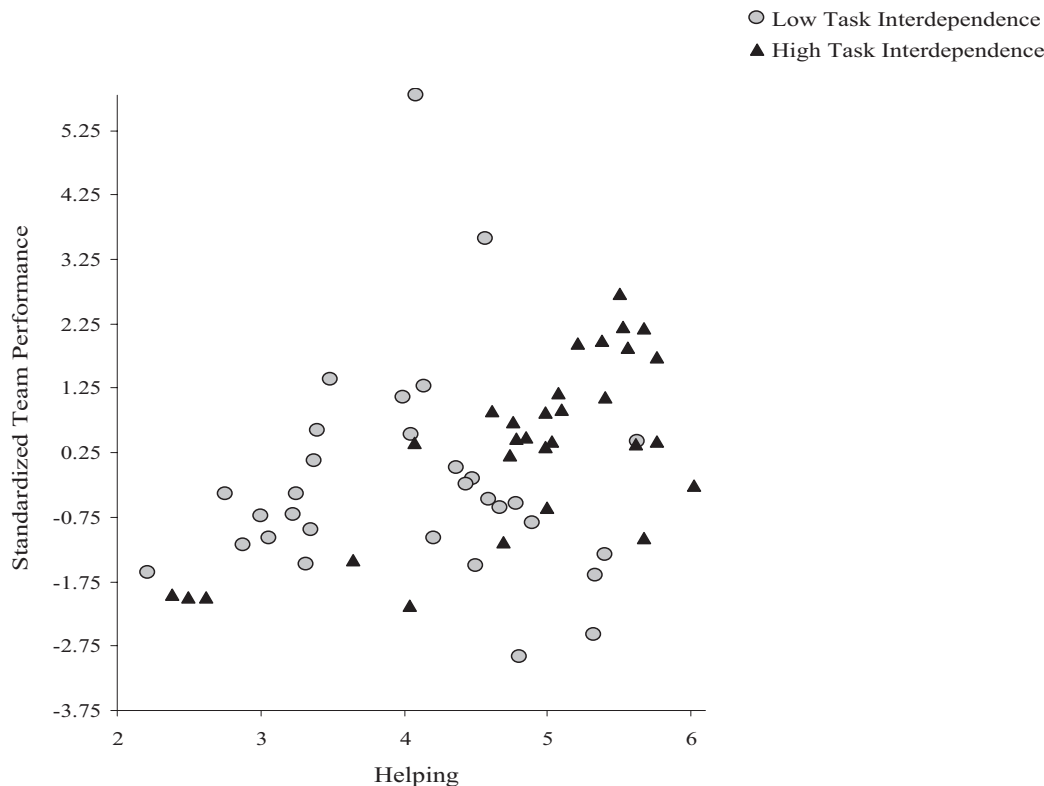


Figure 2. Observed group performance and helping across task interdependence conditions.

moderating effects observed in the current study were somewhat more complex than expected. Specifically, although OCB was positively associated with group performance in the high task interdependence condition, these same behaviors had a significant nonmonotonic relationship with group performance in the low task interdependence condition. The nature of this effect suggests that in the low condition (a) a moderate level of OCB appears to have facilitated group performance, and (b) both high and low levels of these same behaviors were associated with lower group performance.

In hindsight, the observed nonmonotonic function makes a great deal of sense in the current setting (Bobko, 1985) because, although there were significant differences in task interdependence across the two experimental conditions, activities in the low interdependence condition were not completely independent (e.g., task interdependence in the low condition was rated as 4.15 on a 7-point scale). Therefore, although the constraints imposed on groups in the low task interdependence condition precluded the level of interaction required of groups in the high task interdependence condition, the complexity of the task may have encouraged interactions among group members. Thus, although a focus on helping in this condition at the expense of completing one's own tasks was associated with lower group performance, because group members relied on one another marginally, moderate helping may not have been interpreted as threatening (Manz & Angle, 1986) and, therefore, had the potential to be useful. In any case, it will be important for future research in the OCB domain to explore the task interdependence-control relationship more fully.

### Strengths and Weaknesses

There are several strengths of the present study. First, the design of the study was experimental in nature; therefore, it is possible to develop causal inferences from the results we report, which is typically not possible in cross-sectional or single-source research designs (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff & Organ, 1986). The current design also allowed us to have greater confidence that ratings of OCB were not contaminated by evaluators' perceptions of group performance (Bachrach, Bendoly, & Podsakoff, 2001).

Specifically, in a recent experiment, Bachrach et al. (2001) examined the impact of bogus group-level performance feedback on ratings of OCB among student teams. They reported that groups receiving positive feedback provided significantly higher OCB ratings than groups receiving negative feedback, despite no relationship between feedback and actual performance. Bachrach et al. noted that their results raised questions regarding the direction of causality assumed in field studies reporting effects of OCB on group performance, arguing that these relationships may be influenced by evaluators' perceptions of that performance (Staw, 1975). To control for the effects of these perceptions on ratings of OCB, evaluators in the current study provided estimates of group performance. A two-item measure was developed for this purpose: What percentage of teams in this competition (a) will finish ahead of another team and (b) will complete more card packets than another team? Responses were based on the following 7-point scale: 1 (7%), 2 (22%), 3 (36%), 4 (50%), 5 (64%), 6 (79%), and 7 (93%); scores were averaged to form a single scale score ( $\alpha =$

.87). Regression analyses were conducted to determine whether evaluators' performance estimates affected their ratings of helping and whether task structure influenced these effects (Table 3). These analyses revealed no performance estimate effects, although task condition did have significant main effects. However, the condition effect is not too surprising because the task structure in the high task interdependence condition afforded group members more opportunity to help than in the low task interdependence condition.

There are at least two reasons why the effects reported by Bachrach et al. (2001) were absent in the current study. First, Bachrach et al. collected OCB ratings immediately following exposure to performance feedback, thus facilitating participants' access to this information in developing their social perceptions (Carlson, 1980). By contrast, in the current study, these ratings were collected at a time separate from the actual performance of the group, thereby decreasing the influence of this information on evaluators' behavioral judgments (Higgins, 1996). Thus, it may be that the temporal and spatial separation afforded by this methodology reduced the salience of information about performance and, as a result, allowed evaluators to attend more objectively to the behaviors they were asked to code (Mazursky, 1990). Second, in the Bachrach et al. study, participants received performance feedback, whereas neither the subjects in the current study nor the observers who rated OCBs received feedback. Therefore, it may be that definitive group performance feedback has stronger effects than evaluators' performance estimates (e.g., subjective perception) on evaluators' ratings of behavior (Greller & Herold, 1975). However, it is possible (and perhaps even likely) that the effects of OCB and performance are to some extent reciprocal and that, although OCB may influence group performance (Podsakoff & MacKenzie, 1997), group performance also may have effects on ratings of OCB (Bachrach et al., 2001).

The current results also have several implications for future research in organizations. First, if the effects of employee OCB depend on the structural relationships between tasks, it will be important to measure and control for these contingencies. This kind of systematic understanding will allow for better application

Table 3  
*Hierarchical Regression Analysis Regressing Helping Behavior on Performance Estimates Across Task Interdependence Conditions*

Variable	Rating of helping behavior		
	Step 1	Step 2	Step 3
Condition	0.39**	0.39**	0.70*
Performance estimate		0.00	0.14
Performance Estimate $\times$ Condition			-0.38
$R^2$	0.15	0.15	0.17
$F^a$	10.61**	5.22**	4.05*
$\Delta R^2$ , Step 2		0.00	
$\Delta R^2$ , Step 3			0.02
$F$ for $\Delta R^2$		0.00	1.60

Note. Entries are standardized regression coefficients.

<sup>a</sup> Degrees of freedom for Model 1 = (1, 60); Model 2 = (2, 59); Model 3 = (3, 58).

\*  $p < .05$ . \*\*  $p < .01$ .

of science to the practical problems managers face. Second, if structural contingencies affect the utility of OCB, it will be important to determine the extent to which managers are aware of these contingencies (e.g., Podsakoff & MacKenzie, 1994). Managers' rewarding behaviors that detract from unit-level performance could lead to a systematic misalignment between compensation practices and unit performance goals (Deckop, Mangel, & Cirka, 1999). Third, several researchers have reported that task interdependence influences the demonstration of OCB (Van der Vegt & Van de Vliert, 2005). If this is so, it becomes important to understand the extent of this influence and how it affects employee perceptions of their own behavior (Morrison, 1994), as well as managerial expectations regarding its demonstration. These expectations are important because OCBs have been shown to account for significant variance in employee performance evaluations (Borman, White, & Dorsey, 1995).

Finally, the current results also appear to suggest that task structure may influence group members' performance strategies. One possible explanation for this finding is that the demonstration of OCB in low task interdependent groups may diminish members' feelings of autonomy and motivation; as a consequence, members become demoralized and do not work as hard as those in groups that use more structurally appropriate behavioral strategies. As Podsakoff et al. (1997) argued, "lack of motivation may have more of an effect on how hard a group works [which affects quantity of output] than on the manner in which it performs its tasks [which affects quality of output]" (p. 267). Although this argument is clearly speculative, it suggests that future research examining the effects of task structure on members' performance strategies may prove fruitful.

The current study also has several limitations that should be addressed in future research. First, the task in the current study was relatively simple in nature. Future research exploring these relationships should endeavor toward designs that allow for greater applicability to organizational settings. Second, the controlled nature of the current context reduced generalizability of these results. Thus, future research in field settings is clearly called for. Finally, additional studies that allow for a greater range of observation over both time and settings will be needed to develop a clearer picture of how the structural relationships between tasks affect the relationships between employee OCB and group performance outcomes.

The results from the current study provide direct evidence that the structural relationships between tasks in groups have the potential to moderate the effects of member OCB on group performance and suggest a possible explanation for the contradictory empirical findings reported in the OCB literature (Podsakoff et al., 1997; Podsakoff & MacKenzie, 1994). The record is clear: OCB has the potential to increase substantially the productivity of groups (Podsakoff et al., 2000). However, as organizational structures and task relationships become increasingly complex (Townsend, DeMarie, & Hendrickson, 1998), it is only through systematic analysis that researchers will be able to uncover the contingencies that allow for their greatest benefit to manifest itself.

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(Appendixes follow)



Appendix A

Card Sequencing Guidelines

*Cards*

Your team will receive three stacks of three decks of cards (nine decks total). Each stack of three decks will contain one deck with cards that have black backs, one deck with green-backed cards, and one deck with red-backed cards.

*Sequences*

The goal of your team is to produce as many conforming sequences as possible in 60 min. A conforming sequence is a run of 13 cards that meets the following three requirements:

1. The sequence must begin with an ace. Next must come the numbered cards, 2 through 10, in ascending order. Finally, the remaining face cards must follow the 10 in the order of jack, queen, and king.
2. The cards in the sequence must rotate through the suits in the following order: spade, club, heart, and diamond.
3. The back sides of the cards in the sequence must rotate through back colors in the following order: black, green, and red.

Exhibit 1 shows the four possible conforming sequences viewed from the face side.

*Tasks*

Your team must produce sequences by performing the following tasks *in order*: Your team will be disqualified if it does not use this procedure. The goal of the team is to produce as many conforming sequences as possible in 60 min or to reach the maximum number of possible sequences, 36, in the fastest possible time under 60 min. You will receive three shuffled stacks of cards; each of these three stacks will contain three decks—one black, one green, and one red.

1. Sort each stack by color. This will yield three separate decks of cards—one black, one green, and one red.
2. Sort each of the color-sorted decks by suit. This will yield a total of 12 sets of suits—4 for each of the three colors.

3. Order each of these 12 sets by face, i.e., ace, 2 through 10, jack, queen, and then king.
4. Prepare conforming sequences by drawing cards from the 12 sets produced by Step 3.
5. Bind each conforming sequence with a rubber band and place it in a designated envelope.

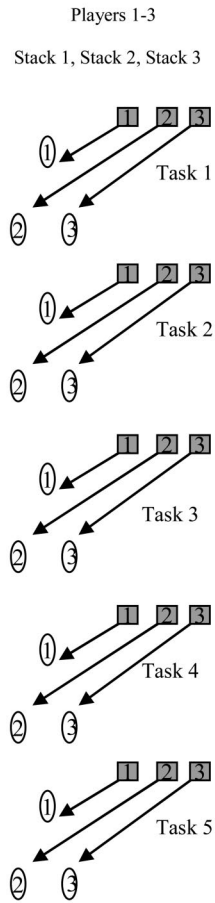
Exhibit 1



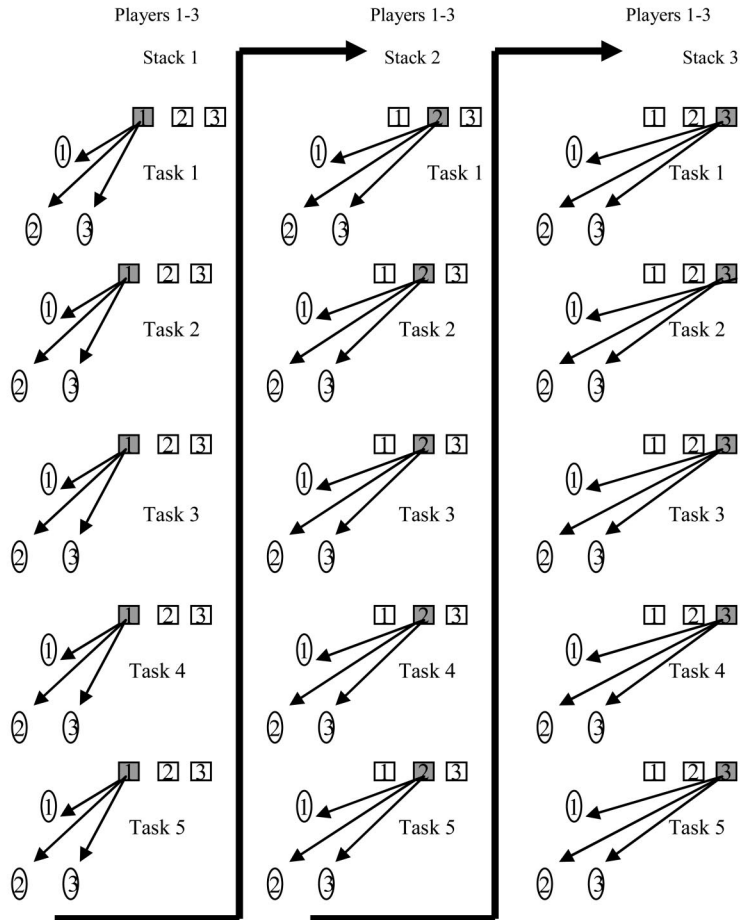
Appendix B

Graphical Representation of the Structural Relationships Between Tasks in the High and Low Task Interdependence Conditions

Low Task Interdependence



High Task Interdependence



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