Antecedents and Performance Consequences of Helping Behavior in Work Groups

A MULTILEVEL ANALYSIS

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Our study examines two models of helping behavior in work groups. Our first model is a cross-level model and predicts that group-level cohesion, cooperative norms, and task conflict are related to individual helping behavior (peer-rated). Results support our hypotheses and further demonstrate that of the three group characteristics, cooperative norms have the strongest relationship with individual helping behavior. Our second model is a group-level model and examines the relationships among configural conceptualizations of group-level helping and group performance in conjunctive tasks. Results demonstrate that the least and the most helpful members in the group influence group performance in interesting ways. We conclude by discussing implications of our findings for practice and future research.

Keywords: helping; multilevel; group characteristics; performance

Helping other group members, such as sharing resources or assisting those who are behind in their work, is a form of discretionary behavior that has many potential benefits for the immediate work group and the organization (Anderson & Williams, 1996; Borman & Motowidlo, 1993; Organ, 1988; Van Dyne, Cummings, & McLean Parks, 1995). Today, the organizational benefits of helping are further accentuated by the increasingly interdependent nature of jobs and team-based organizational structures (Ilgen &

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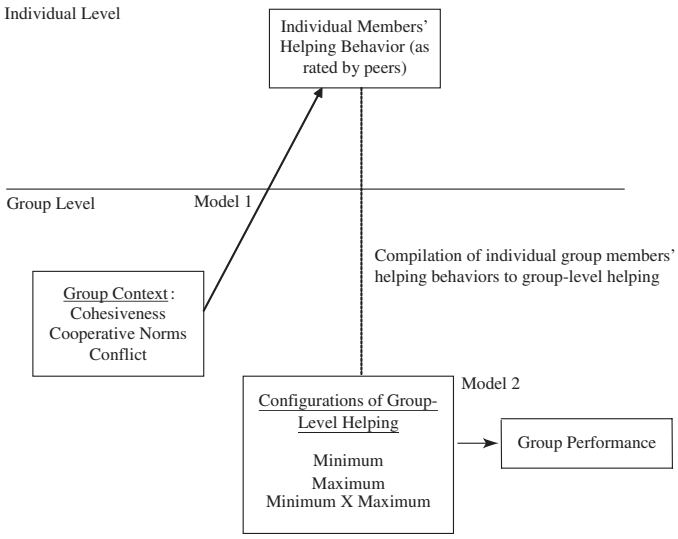

Figure 1: A Multilevel Model of Helping Behavior in Work Groups

Pulakos, 1999). Thus, helping behavior in work groups, the focus of this article, is a critical phenomenon in organizations.

We define helping behavior as voluntarily assisting other group members in work-related areas (e.g., Anderson & Williams, 1996; Van Dyne & LePine, 1998). Other conceptually similar constructs, such as Organ's (1988) altruism dimension of organizational citizenship behavior (OCB), George and Brief's (1992) helping coworkers dimension of organizational spontaneity, and Borman and Motowidlo's (1993) helping-others dimension of contextual performance, indicate the prevalence of research on individual-level helping. As with Anderson and William's (1996) approach, our focus is on helping behavior itself, recognizing that helping may be in-role or extrarole. In contrast to prior research, however, we examine the antecedents of helping behavior (Figure 1, Model 1) and the group performance consequences of helping (Figure 1, Model 2) at two levels of analyses.

At the cross level of analyses (Figure 1, Model 1), we seek to understand relationships among characteristics of the work group and an individual's helping behavior (as rated by other group members). Specifically, we consider three group characteristics (group cohesion, cooperative group norms, and group task conflict) and their concurrent cross-level relationships with individual helping behavior in the group. Although much has been done on the predictors of helping behavior (see reviews by LePine, Erez, & Johnson,

2002; Podsakoff, MacKenzie, Paine, & Bachrach, 2000), surprisingly little research has focused on the role of group characteristics or context (for an exception, see Kidwell, Mossholder, & Bennett, 1997). Rarer still is research that simultaneously examines multiple group characteristics in relation to helping behavior. Thus, one contribution of our study is to fill the gaps in our current understanding of the relative effects of group characteristics on individual group member's helping behavior.

At the group level of analysis (Figure 1, Model 2), we seek to understand the effect of helping behavior on group performance (in conjunctive tasks). Given that our performance criterion of interest is at the group level, we also conceptualize helping behavior at the group level for this part of the model to avoid the fallacy of the wrong level (e.g., Klein, Dansereau, & Hall, 1994). The concept of group-level helping was first advanced by George and Bettenhausen (1990), who argued that work groups vary in the extent to which prosocial behaviors are displayed by members and that the incidence of these behaviors may be meaningfully associated with group characteristics and group outcomes. Underlying the authors' arguments is a shared perspective that group-level helping exists and is valid only when individuals within the group share similar perceptions (Hofmann, 2002; Kozlowski & Klein, 2000).

In this article, we propose an alternative view that offers a novel and less-restrictive perspective on helping behavior in groups. Here, we propose a configural conceptualization of group-level helping that does not require the sharing of similar perceptions and, hence, does not have homogeneity as a defining characteristic (Hofmann, 2002; Kozlowski & Klein, 2000). Rather, it recognizes that individual attributes can combine in multiple and complex ways to form the group property. An example is personality research that uses extreme individual scores within the group (such as the highest and lowest personality scores) as an index of group composition (e.g., Barrick, Stewart, Neubert, & Mount, 1998). This approach uses individual members' traits to arrive at a group-level property that is distinctively different from individuals' personality and that at the same time does not require within-group homogeneity.

Applying this configurational conceptualization, we operationalize group-level helping by identifying the least and the most helpful members in the group. This approach reflects an alternative way of construing group-level helping and acknowledges the usefulness of other conceptualizations of group-level helping (besides taking the average). We elaborate on this approach and our corresponding hypotheses later in this article.

The organization of this article is based on the research objectives discussed above. We begin by proposing cross-level relationships among three

group characteristics and individual helping behavior. Next, we discuss the relationship between group-level helping and group performance, using the configurational approach. We tested our hypotheses using data from student-project groups involved in highly interdependent conjunctive tasks that spanned 3 months. We conclude with a discussion of research and practical implications.

THEORETICAL DEVELOPMENT

GROUP CONTEXT AND INDIVIDUAL HELPING

Cappelli and Sherer (1991) proposed that context plays a critical role in shaping individual attitudes and behavior: "The surroundings associated with phenomena that help to illuminate that phenomena" (p. 56). Because the focus of our study is on helping in groups, the most relevant context is the group. Hackman (1992) theorized that groups influence individual behavior through both ambient and discretionary stimuli that provide cues about appropriate attitudes and behaviors within the group. More directly related to our current study is the theorizing of George and Jones (1997), which asserts that group and organizational contexts play a critical role in facilitating spontaneous behavior such as helping.

Despite the importance of group context effects on individual behavior, little cross-level research has been conducted to date on helping behavior. An exception is the work by Kidwell, Mossholder, and Bennett (1997), who adopted hierarchical linear modeling (HLM) to examine how group cohesion (a shared group-level construct) and individual job attitudes (individual-level factors) were related to individual courtesy and conscientiousness (two forms of OCB).

In our research, we extend Kidwell et al.'s (1997) approach by proposing a cross-level model targeted at explaining another type of OCB—helping. Our study also differs from Kidwell et al.'s by including two other shared group-level constructs (cooperative norms and group task conflict) in addition to group cohesion. Our goal here is to further the understanding of the relationship between contextual factors and individual helping behavior. Group cohesion, cooperative norms, and group task conflict are important aspects of group social context because they influence the cues received by group members (Hackman, 1992). As we describe in more detail below, we posit that these cues can be meaningfully related to the helping behavior of individual group members.

Group cohesion. Festinger (1950) defined group cohesion as "the resultant of all the forces acting on the members to remain in the group" (p. 274). Cohesion can be further delineated into two aspects: an interpersonal aspect that focuses on liking for the group and a task-oriented aspect that focuses on shared commitment to the task (e.g., Festinger, 1950; Festinger, Schachter, & Back, 1950; see also Mullen & Copper, 1994). Consistent with Kidwell et al. (1997), our focus is on interpersonal aspects of cohesion because our rationale for the cohesion-helping relationship is based on member's identification with each other rather than with the task. Research has shown that individuals in cohesive groups are attracted to one another, have frequent intra-group communication, and evaluate each other positively (e.g., see review by Cohen & Bailey, 1997). Findings on the effect of interpersonal cohesion on group outcomes have, however, been mixed, depending on the nature of the criterion and the presence of moderating variables (e.g., group size, amount of interaction, task interdependence; see Gully, Devine, & Whitney, 1995; Mullen & Copper, 1994). For productivity outcomes, for instance, Mullen and Copper's (1994) meta-analysis indicated a weak positive effect for interpersonal cohesion on group performance in experimental studies but a weak negative effect in correlational studies. For decision-making research, Mullen, Anthony, Salas, and Driskell's (1994) separate meta-analysis reported a negative relationship between interpersonal cohesion and quality of decisions, suggesting that interpersonal cohesion fosters groupthink.

For outcomes that focus on discretionary, extrarole, or altruistic behaviors, several studies have argued for and reported a positive relationship with interpersonal cohesion (e.g., Kidwell et al., 1997; Organ, 1988; Rutkowski, Gruder, & Romer, 1983). Kidwell et al. (1997), for instance, proposed a positive relationship between group cohesiveness and OCBs and premised their arguments on social exchange theory (Blau, 1964). According to this perspective, members in cohesive groups should be more willing to contribute positive behaviors such as OCB because they are likely to possess high quality exchange relationships with each other (cf. Anderson & Williams, 1996; Settoon, Bennett, & Liden, 1996). Likewise, the study on bystander intervention by Rutkowski, Gruder, and Romer (1983) found that more cohesive groups demonstrated more helping in an emergency than did less cohesive groups. They reasoned that individuals in more cohesive groups felt a greater responsibility to help when others are in need.

Another rationale that supports a positive relationship between interpersonal cohesion and helping stems from the prosocial behavior and mood literature (e.g., Aderman, 1972; George, 1991; Isen & Levin, 1972), which

argues that members of cohesive groups are more likely to help one another because they generally experience greater satisfaction and a more positive mood. This is consistent with George and Brief's (1992) argument that work groups with positive affective tone (possibly as a result of group cohesiveness) tend to foster organizational spontaneity, which includes helping coworkers. Applying these theoretical perspectives and empirical evidence, we propose:

Hypothesis 1 (H1): There is a positive relationship between group cohesion and individual helping behavior.

Cooperative group norms. Norms, defined as regular behavior patterns that are relatively stable and expected by group members (Bettenhausen & Murnighan, 1991), are powerful and efficient mechanisms for regulating member behavior (Feldman, 1984; Hackman, 1992). Norms are typically formed early in the lifespan of the group (Bettenhausen & Murnighan, 1985) and serve to direct behavior, allow members to anticipate the behavior of others, and facilitate quick, appropriate responses (Shaw, 1981). According to Hackman (1992), norms apply to behavior (not to private thoughts or feelings) and typically regulate activity that is important to the group.

One type of behavior that may become codified as a norm in work groups is the expectation that members will cooperate with one another (Wageman, 1995). Cooperative group norms reflect the degree of importance members place on their shared pursuits, shared objectives, and mutual interests (Chatman & Flynn, 2001) and thus have important implications for discretionary helping behavior in the group. When a group has strong norms for cooperation, members expect each other to engage in information sharing and other affiliative behaviors that enhance task completion (Van Dyne et al., 1995). This shared expectation creates obligations for members to help each other (George & Jones, 1997). Conversely, groups with weak cooperative norms tend to emphasize independence rather than cooperation, leading to greater differentiation among members which, in turn, may discourage helping behavior (Chatman & Flynn, 2001). Accordingly, we propose:

Hypothesis 2 (H2): There is a positive relationship between group cooperative norms and individual helping behavior.

Group task conflict. Recent research in conflict, broadly defined as perceived incompatibilities by the parties involved (Boulding, 1963), demonstrates that it is multidimensional (e.g., Jehn, 1995, 1997). Our focus is on group task conflict, which concerns disagreement in ideas and viewpoints

relating to work issues. In general, research demonstrates that group task conflict is detrimental to interpersonal relationships within the group (Jehn, 1995). One reason is that the criticism and debate arising from task conflict may be interpreted by group members as political gamesmanship, where one person tries to gain influence at the expense of others (Eisenhardt & Bourgeois, 1988; Finkelstein, 1992). As a result, group task conflict may trigger personal dislike, avoidance, and cynicism among group members (Amason, 1996). Thus, even though group task conflict may ultimately improve group effectiveness, the tension and antagonism generated during the course of conflict resolution typically frustrate individuals (Amason & Schweiger, 1994; Baron, 1990). In support of this argument, results of a recent meta-analytic review of team conflict demonstrated a negative population correlation between task conflict and member satisfaction (De Dreu & Weingart, 2003).

Accordingly, we argue that group task conflict will be negatively related to individual helping behavior because of poorer quality relationships (cf. Anderson & William, 1996; Blau, 1964; Settoon et al., 1996) and less positive mood states (e.g., Aderman, 1972; George, 1991; Isen & Levin, 1972) arising from disagreements about the group task. Thus:

Hypothesis 3 (H3): There is a negative relationship between group task conflict and individual helping behavior.

To summarize, we have proposed that group cohesion and cooperative norms will be positively related to individual helping behavior, whereas group task conflict will be negatively related to individual helping behavior. Next, we shift our attention to helping behavior at the group level and examine its relationship with group performance.

GROUP-LEVEL HELPING AND GROUP PERFORMANCE

Prosocial behavior (such as helping) has traditionally been viewed as an individual-level phenomenon. Theoretical justification for extending prosocial behavior to the group level was first put forth by George and Bettenhausen (1990), who argued that work groups can vary in the amount of prosocial behavior displayed by group members. They further substantiated their arguments with examples of existing theoretical frameworks that support conceptualizing prosocial behaviors at the group level, such as attraction-selection-attrition theory and social influence theory. Specifically, both theories imply that there will be some degree of uniformity in the display of prosocial behaviors within groups (George & Bettenhausen, 1990). Attraction-selection-attrition theory proposes that similar people are attracted to, selec-

ted by, and retained in a work setting (Schneider, 1987), whereas social influence theory suggests that member informational and affective states, as well as member behaviors, are shaped by the group (Hackman, 1992).

Consistent with these theoretical arguments, George and Bettenhausen (1990) operationalized group-level prosocial behavior as the average of individual member scores within the group. This treatment of group-level behavior implies a shared phenomenon and further suggests that the distribution of a characteristic within the group (such as the lowest or highest level of individual helping) is less important. This makes sense for additive tasks, where each person's contribution adds value and where low interdependence makes variability of contributions less of a problem (Steiner, 1972). Average scores, however, can mask important information, especially when tasks are more complex and require more than additive combinations (e.g., Barrick et al., 1998).

Thus, although we acknowledge the importance of the traditional construal of group-level helping as a shared construct (i.e., average helping in the group), we propose that helping can also be viewed as a configural construct. Configural constructs are similar to shared constructs in that they arise from individual-level attributes, but they differ in that they do not require individual group member attributes or perceptions to be homogeneous (Hofmann, 2002; Kozlowski & Klein, 2000). For instance, perceptions of charismatic leadership may not be shared by all followers because a leader may share his or her charisma with all, some, or none of the followers (Klein & House, 1995).

Likewise, we propose that group-level helping behavior is not necessarily a shared construct because individuals in many groups do not contribute similar amounts of helping. For example, individuals in groups with little identity or unstable membership are unlikely to exhibit a homogeneous level of helping. Similarly, groups with little history or those that require minimal interaction may not be influenced by the attraction-selection-attrition cycle, which would otherwise strengthen the consistency of helping within the group (Schneider, 1987). In these situations, there may be a great disparity in helping behaviors exhibited by members within the same group, with some displaying large amounts of helping and others displaying very little.

Hence, an interesting research question that has not been considered in the helping literature is whether groups differ in their performance as a function of extreme helping behaviors in the group (i.e., the least and the most helpful members).

Group composition theories suggest that in some situations extreme individual responses in the group can have an important effect on group outcomes

(Barrick et al., 1998; Kenrick & Funder, 1988; Shiflett, 1979; Steiner, 1972; Tziner & Eden, 1985). Steiner (1972) for instance, argued that the task demands on the group constitute an important context for understanding the effects of individual contributions to the group. When the group task cannot be easily divided into subtasks and performed in a piecemeal fashion by individual group members, the group outcome must depend on either a single member or on several members producing some combination of the work. More specifically, Steiner (1972) proposed two types of task demands where the contributions of one single member can significantly influence group performance.

The first type of task is disjunctive, where the group as a whole must endorse a single solution and must reject all others. Steiner (1972) illustrated this with an example of a complex problem-solving task that has one optimal solution. Such a task is disjunctive in nature because different group members may reach different conclusions and because there is no meaningful way to add, average, or otherwise blend individual perspectives into a group product. In this case, group problem solving depends on the ability of the most competent member of the team.

The second type of task is conjunctive. In these tasks, subtasks must be adequately performed by group members for the group to achieve satisfactory results. For example, a team of mountain climbers can move only as fast as its slowest member. Similarly, in a relay race, each individual's contributions are essential to overall group performance. Thus, Steiner argued that group productivity depends on the resources of the group's least competent member when outcomes require the collective efforts of all members.

In our study, we focused on project groups where members had to work on three conjunctive tasks, two business case analyses and one 30-minute presentation, over 3 months. Across these tasks, interdependence among group members was structured and ensured in three ways. First, all members were required to participate in the presentation, either by taking turns to conduct a portion of the entire presentation or by jointly acting in a role-play. In evaluating the presentation, students were told that emphasis would be given to the overall content and coherence of the presentation. Thus, any group member who failed to cooperate with others (e.g., the least helpful member) to ensure a smooth integration and transition of the content covered by various presenters could cause the overall group performance to suffer. Second, the case analyses were complex tasks (with no obvious solutions) that required a variety of skills, including research, critical thinking, planning, organizing, and writing, to ensure satisfactory group performance. Third, to be aligned with the interdependent nature of the tasks, all members in the group received the same grade for the group projects (e.g., Wageman, 1995).

In the next paragraphs, we build on the conjunctive nature of these group tasks to develop hypotheses relating group-level helping to group performance. First, consistent with the work of George and Bettenhausen (1990) and other scholars (e.g., Koys, 2001; Podsakoff, Aherne, & MacKenzie, 1997), we expect groups with higher mean levels of helping to have higher performance because, on average, these groups experience greater exchange of resources and support among group members in completing the tasks, and the less competent members are likely to have received assistance from more capable members. Thus, we replicate existing studies by proposing:

Hypothesis 4 (H4): There is a positive relationship between the average level of helping in the group and group performance.

More interestingly, we argue that a configural perspective on group-level helping can provide additional insights into group performance. We base our hypotheses on Steiner's (1972) theory that suggests that it is meaningful to examine individual members' input under certain task conditions. Consistent with Steiner's theory that, for conjunctive tasks, all members must perform adequately for the group to do well, we propose that in our study the least helpful member in the group should affect the group's performance. This is because when members are interdependent and have differentiated roles, one extremely unhelpful member can deter others from completing their tasks and can, consequently, hurt overall group performance. For instance, the least helpful member can affect group performance indirectly through lowering group morale or directly through failing to assist others at critical junctures (e.g., during the group presentation). Thus, we propose:

Hypothesis 5 (H5): There is a positive relationship between the minimum level of helping in the group and group performance.

We argue, however, that maximum helping in the group should not have an impact on group performance. Unlike a disjunctive task, where the most competent member can contribute significantly to the group's overall performance, performance in a conjunctive task depends on the collective inputs of members and is often constrained by the least capable member (Steiner, 1972). With respect to the group projects in our study, it is therefore unlikely that the inputs of an extremely helpful member can make considerable improvements to the overall quality of the group outputs. This is because performance in these complex and interdependent group projects requires differentiated yet coordinated inputs from all members, and the most helpful member is unlikely to assist or address all aspects of the group tasks by himself or herself. Accordingly, we propose:

Hypothesis 6 (H6): There is no relationship between the maximum level of helping in the group and group performance.

Next, we propose that the combined effects of the most helpful and the least helpful members will influence group performance. This final hypothesis is premised on team composition research that suggests variability among team members in a particular attribute can be detrimental to the group. For example, Tziner and Eden (1985) demonstrated that a high-ability member achieved more when working with other uniformly high-ability members than when working with low-ability members. Likewise, Barrick et al. (1998) reported that groups with greater variation in the personality characteristic of conscientiousness were more likely to perform poorly. Barrick and colleagues attributed this to feelings of contribution inequity among group members.

Applying this to our research, we argue that groups with members that exhibit extreme helping behavior are least likely to perform well. This is because great disparities in member inputs create frustration and dissatisfaction when collective efforts are required (Steiner, 1972). We use the interaction between maximum and minimum helping to assess the disparity in helping behavior. In other words, groups with greater disparities are those with a relatively low minimum level of helping (the least helpful member displays relatively less helping than the least helpful members of other groups) and a relatively high maximum level of helping (the most helpful member displays relatively more helping than the most helpful members of other groups). Conversely, groups with other combinations of minimum and maximum helping have less disparity such that helping contributions within the group are more similar. Thus, we predict:

Hypothesis 7 (H7): Groups with greater disparity in member helping behavior (low minimum and high maximum) will have lower performance than groups with less disparity in member helping behavior.

METHOD

RESEARCH SETTING AND PARTICIPANTS

We tested our hypotheses with data on 815 business school undergraduate students (assigned to 176 groups) enrolled in a management course at a large university in the Midwest. Within the course, there were 21 sections, each with approximately 40 students. Instructors randomly assigned students to groups of four or five, and students completed three group assignments (one

class presentation and two written case analyses) during the 15-week semester. As described earlier, these tasks were highly interdependent because all members were required to participate in the projects, all members received the same group score for each project, and all members knew that peers would assess their participation on the three group projects, which represented 20% of the course grade. The average age of participants was 21 years (*SD* = 1.40), 57% of the sample was male, and, on average, each group had five members (*SD* = 0.76).

MEASURES

Individual-level helping. At the end of the semester, individual helping was assessed by work group peers using four items from Van Dyne and LePine's (1998) helping scale (e.g., helped other group members with their work responsibilities; 1 = *strongly disagree*, 5 = *strongly agree*). Cronbach's alpha was .95. As suggested by Shrout and Fleiss (1979), we assessed interrater reliability of peer-rated helping behavior using intraclass correlation (ICC). ICC(1) and ICC(2) were .44 and .69, respectively, indicating acceptable agreement. Hence, each person's helping behavior was computed by aggregating peer ratings on the four helping items.

Group-level constructs. At the end of the semester, students assessed group-level cohesion, cooperative norms, and task conflict. Because we conceptualized these group variables as shared constructs, individual items should be aggregated only when individual judgments coincide (Chan, 1998; Hofmann, 2002). Adopting Hofmann's recommendation, we computed both r_{wg} and ICC(1) for each of the three constructs as a stringent test to determine whether they can be aggregated to the group level.

We measured interpersonal group cohesion with four items (e.g., I liked belonging to the group because we got along well with each other; 1 = *strongly disagree*, 5 = *strongly agree*) developed by Zaccaro (1991). The r_{wg} was .82, and the ICC(1) was .25. Group task conflict was measured with four items (e.g., There were frequent conflicts about ideas in my group; 1 = *strongly disagree*, 5 = *strongly agree*) developed by Jehn (1995). The r_{wg} was .78, and the ICC(1) was .19. We measured cooperative norms with three items (e.g., In my group, we expect everyone to assist one another in order to benefit the group; 1 = *strongly disagree*, 5 = *strongly agree*) adapted from Wageman's (1995) cooperation norm scale. The r_{wg} was .90, and the ICC(1) was .13. According to Klein and associates (2000), all indices of r_{wg} and ICC(1) for group cohesion, cooperative norms, and task conflict in our study

indicated acceptable agreement because r_{wg} was greater than .70 and because there was a statistically significant *F* test for ICC(1). Hence, we aggregated these items to the group level.

To assess the discriminant validity of these constructs, we conducted a principal components factor analysis of the 15 items (helping behavior, group cohesion, cooperative norms, and task conflict) with varimax rotation at the individual level of analyses. Results in Table 1 demonstrated four distinct factors (eigenfactor values > 1; total variance extracted = 80.6%). All items loaded on the expected factors, with no problematic cross loadings (highest cross loading was .32, compared to .83 for primary loading). In sum, these analyses suggest that individual helping behavior could be discriminated from the three group contextual factors, which in turn could also be differentiated from each other.

In contrast to the group-level variables of cohesion, cooperative norms, and task conflict, we construed group-level helping as a configural construct that does not emphasize homogeneity. We operationalized minimum helping as the lowest individual helping score in the group and maximum helping as the highest individual score in the group.

Finally, we used a global conceptualization of group performance: group scores from course instructors. Because all group members received the same score, this construct originates at the group level and has no individual-level components. Performance was the total number of points earned by the group on the three group assignments (maximum possible score was 200).

ANALYSES

Cross-level analyses. Because H1, H2, and H3 propose group-level effects on individual helping, we used HLM to test this cross-level model. A main advantage of HLM is that it allows the examination of relationships at different levels while maintaining the appropriate level of analysis (Hofmann, 1996). Specifically, because HLM explicitly models both individual- and group-level residuals (unlike ordinary least squares analysis), HLM acknowledges that individuals within one group may be more similar to one another than to individuals in other groups (Bryk & Raudenbush, 1992). We also checked for missing data, which was not an issue because only one person's helping behavior score was missing. We replaced the missing value using mean substitution.

HLM is a two-step process that first examines relationships among variables within groups in a level 1 equation (i.e., individual-level relationships) and then regresses these level 1 intercept and slope parameters onto group-

TABLE 1
Items and Factor Analyses for Group Characteristics and Individual Helping

Items	*1*	*2*	*3*	*4*
Helping behavior				
1. Helped other group members with their work responsibilities.	.93	.10	–.06	.08
2. Assisted other group members in their work for the benefit of the group.	.93	.10	–.09	.11
3. Got involved to benefit the group.	.91	.09	–.07	.07
4. Volunteered to do things for the group.	.91	.08	–.05	.09
Group cohesion				
5. Thought that belonging to this group was enjoyable because of the people.	.11	.89	–.16	.24
6. Found that interacting with other group members was pleasurable.	.10	.89	–.15	.23
7. Liked belonging to the group because we got along well with each other.	.11	.85	–.18	.20
8. Enjoyed the group experience because we felt we could be friends with other group members.	.10	.85	–.10	.27
Group task conflict				
9. There was conflict about how to do the work in my group.	–.03	–.18	.87	–.09
10. There were frequent conflicts about ideas in my group.	–.07	–.15	.86	–.07
11. There were differences of opinion about the work in my group.	–.08	–.08	.83	–.12
12. People in my group disagreed about opinions regarding the work.	–.07	–.10	.81	–.07
Cooperative norms				
13. In my group, we expect everyone to assist one another in order to benefit the group.	.08	.32	–.13	.83
14. My group's norm is to help one another with our assigned group tasks.	.09	.22	–.19	.82
15. In my group, we think that everyone should volunteer to do things for the group.	.16	.28	–.03	.79

level variables in a level 2 equation (i.e., group-level or cross-level relationships). HLM analysis requires the prerequisite condition of systematic between-group variance in the dependent variable (individual helping behavior). We assessed this by running a null model in HLM (i.e., a model with no predictors). To test H1, H2, and H3, which proposed main effects of group context on individual helping behavior, we ran the following (Model 1):

Level 1 (Equation 1): Individual helping = $\beta_{0j} + \varepsilon_{ij}$.
Level 2 (Equation 2): $\beta_{0j} = \gamma_{00} + \gamma_{01}$ (Cohesion) + γ_{02} (Cooperative norms) + γ_{03} (Conflict) + μ_{0j}.

Equation 1 has no predictors except for an intercept term (β_0) because we did not posit any individual-level predictors of helping in H1, H2, or H3. β_{0j} represents the mean level of helping for group j, and the term ε_{ij} represents the residual within-group variance. Next, in Equation 2, we modeled the group's mean level of helping as a function of group cohesion (γ_{01}), cooperative norms (γ_{02}), and task conflict (γ_{03}). The *t* tests associated with these estimated parameters provide a direct test of H1, H2, and H3. In addition, we adopted Hofmann's (1996) strategy of computing percentage of variance explained by the group-level predictors by taking the ratio of the intercept variance accounted for by cohesion, task conflict, and cooperative norms to the intercept variance found in the null model.

Group-level analyses. For H4 and H5, we conducted multiple regressions (Cohen, Cohen, West, & Aiken, 2003) to test the relationships of the various conceptualizations of group-level helping with group performance. In these analyses, we controlled for group size because existing research demonstrates it can affect group processes and outcomes (see Bettenhausen, 1991). To test for H4, we entered mean helping into the regression equation. For H5, H6, and H7, we entered minimum and maximum helping (H5 and H6) as well as the product term (H7) into the regression equation. Consistent with Aiken and West (1991), we centered our predictor variables to reduce multicollinearity between lower order and higher order terms. We report final step beta values, and because all hypotheses were directional, we used one-tailed tests to interpret our results.

RESULTS

Table 2 presents descriptives, correlations, and internal consistencies of individual-level variables. Table 3 presents this information at the group level of analysis. Because HLM results for the null model indicated significant between-group variance ($\tau_{00} = .07$, $df = 175$, $\chi^2 = 492.56$, $p < .00$), we proceeded to test the hypotheses that group cohesion, cooperative norms, and task conflict were related to individual helping (H1, H2, and H3). Results supported all three hypotheses. As predicted, group cohesion ($\beta = .16$, $p < .01$) and cooperative norms ($\beta = .34$, $p < .01$) were positively related to

TABLE 2
Descriptive Statistics, Correlations, and Internal Consistencies for Model 1 (Individual-Level Variables)

Variable	M	SD	*1*	*2*	*3*	*4*
1. Group cohesion	4.27	.80	(.94)			
2. Cooperative norms	4.17	.76	.57**	(.84)		
3. Group task conflict	2.40	.96	–.33**	–.28**	(.85)	
4. Helping behavior	4.52	.51	.24**	.25**	–.17**	(.95)

NOTE: $N = 815$; Figures in parentheses are Cronbach's alphas.
*$p < .05$; **$p < .01$.

TABLE 3
Descriptive Statistics, Correlations, and Internal Consistencies for Model 2 (Group-Level Variables)

Variable	M	SD	*1*	*2*	*3*	*4*	*5*	*6*	*7*
1. Group cohesion	4.27	.52	(.96)						
2. Cooperative norms	4.17	.44	.70**	(.89)					
3. Group task conflict	2.39	.59	–.43**	–.40**	(.91)				
4. Helping—mean	4.52	.34	.62**	.69**	–.46**	(.94)			
5. Helping—minimum	4.08	.75	.43**	.52**	–.42**	.81**	(.94)		
6. Helping—maximum	4.79	.24	.54**	.55**	–.26**	.79**	.38**	(.94)	
7. Group size	4.63	.76	.06	.06	.08	–.04	–.12	.07	—
8. Group performance	177	5.49	–.04	–.05	.09	–.03	.04	–.13	.21**

NOTE: $N = 176$; Figures in parentheses are Cronbach's alphas.
*$p < .05$; **$p < .01$.

individual helping, whereas group task conflict ($\beta = -.11$, $p < .01$) was negatively related to individual helping. We conducted a usefulness analysis (Darlington, 1968) to gain a better understanding of the relative contributions of group cohesion, task conflict, and cooperative norms in explaining variance in individual helping. To do this, we ran a series of HLM analyses and compared the variances explained by different combinations of two predictors to the total variance explained by all three predictors.

For instance, to determine the relative contribution of group cohesion in explaining individual helping, we first ran a model of group task conflict and cooperative norms. The variance explained by this model, subtracted from 83.5% (i.e., the total variance explained by all three predictors), gives an indication of the effect size of group cohesion. Next, we ran another model, consisting of cohesion and cooperative norms. Subtracting the variance

TABLE 4
Results of Ordinary Least Squares Regressions for Mean Helping on Group Performance (H4)[a]

Predictor Variables	*Dependent Variable Group Performance*
Group size	.21**
Mean group helping	–.02
Overall R^2	.05
F	4.18**
df	2,173

a. Final step standardized beta values.
*$p < .05$; **$p < .01$.

TABLE 5
Results of Ordinary Least Squares Regressions for Minimum and Maximum Helping on Group Performance (H5a-H5c)[a]

Predictor Variables	*Dependent Variable Group Performance*
Group size	.24***
Minimum group helping	.08
Maximum group helping	–.10
Minimum × maximum group helping	.20**
Overall R^2	.12
F	5.48**
df	4,175

a. Final step standardized beta values.
*$p < .05$; **$p < .01$; ***$p < .001$.

explained by this model from 83.5% indicates the contribution of group task conflict. We repeated the procedure for cooperative norms. These results show that group cohesion explained 4.2% of the variance in individual helping behavior, over and above that explained by group task conflict and cooperative norms. Group task conflict explained 4.0% of the variance, and cooperative norms explained 14.4% of variance, over and above the other group predictors. In sum, of the three contextual predictors, cooperative norms were particularly relevant to individual helping.

Our next set of hypotheses (H4, H5, H6, and H7) examined group-level relationships among helping and performance. Tables 4 and 5 present results of the regression analyses, where final-step standardized betas are reported. Results in Table 4 did not support H4, which proposed a positive

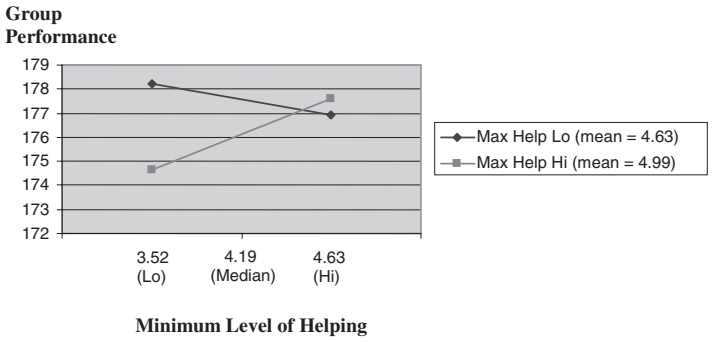

Figure 2: Interaction Between Minimum and Maximum Helping

relationship between average helping in the group and group performance ($\beta = -.02$, $p > .10$).

H5 proposed a positive relationship between minimum level of helping in the group and group performance, whereas H6 proposed no significant relationship for maximum helping. Results in Table 5 demonstrate no significant relationships for both minimum helping ($\beta = .08$, $p > .05$) and maximum helping ($\beta = -.10$, $p > .05$) with group performance, thus supporting H6 but not H5.

Finally, H7 proposed an interaction between minimum and maximum level of helping on group performance, such that groups with greater disparity in helping behaviors between the most and the least helpful members would perform more poorly than those with less disparity. Results in Table 5 demonstrate a significant interaction term ($\beta = .20$, $p < .01$). The form of the interaction, plotted using a median split, is illustrated in Figure 2.

To test if performance in groups with the greatest disparity of helping behavior (i.e., low minimum and high maximum) was worse than in groups with the other three combinations of helping behavior, we adopted the dummy-variable coding procedure described by Cohen and Cohen (1983). Specifically, we dummy-coded groups into three dichotomous variables (1 or 0) representing (a) low minimum and low maximum helping (x_1); (b) high minimum and low maximum helping (x_2); and (c) high minimum and high maximum helping (x_3). Groups with low minimum and high maximum helping behavior, our focal interest, were not coded because they were implicitly treated as the reference group in the coding system. The three dichotomous variables were then entered into a regression equation predicting group performance. To interpret the results of the regression analyses, a significant beta coefficient in the positive direction for a dummy variable suggests that

performance for that particular group is better than for groups with the greatest disparity of helping behavior (i.e., the reference group).

Our results support H7. Specifically, beta coefficients for the three dummy variables were all significant in the positive direction ($\beta_1 = .28$, $p < .01$; $\beta_2 = .17$, $p < .05$; $\beta_3 = .26$, $p < .01$), suggesting that, compared to groups with low minimum and high maximum helping, the other three groups with less disparity in helping behavior performed relatively better.

POST HOC ANALYSIS

Because prior research has demonstrated a positive relationship between average helping and group performance, we were surprised that our study did not yield a similar main effect. Hence, we conducted one post hoc analysis to test for a curvilinear effect. We speculated that the average level of helping in the group could affect group performance positively but at an increasing rate (i.e., upward concave) if the conjunctive nature of the task engendered disproportionately greater benefits to the group at higher levels of helping than at lower levels of helping. This is similar to Hackman's (1987) idea of synergistic gains from group interaction, which can contribute to effective performance by minimizing process losses and using member resources efficiently and by creating new internal resources and capabilities. We speculated that given the conjunctive nature of the group tasks in our study, the benefit of a unit increase in helping might be self-reinforcing, thus enhancing the quality of group outputs disproportionately and resulting in a quadratic relationship where a one unit increase in average helping caused more than a one unit increase in overall group performance. For example, this synergy might be especially beneficial if helping occurred throughout all phases of the work (e.g., conceptualization, collection of materials, analysis, writing, and presentation).

To test this speculation, we controlled for group size and entered the mean level of group helping and its squared term into the regression equation. Results showed a positive and significant squared term ($\beta = .19$, $p < .05$, $\Delta R^2 = 3.7\%$), which, according to Aiken and West (1991), suggests an upward concave curve. Figure 3 illustrates this relationship.

DISCUSSION

The key goals of this research were to further our understanding of the cross-level relationships among contextual factors and individual helping

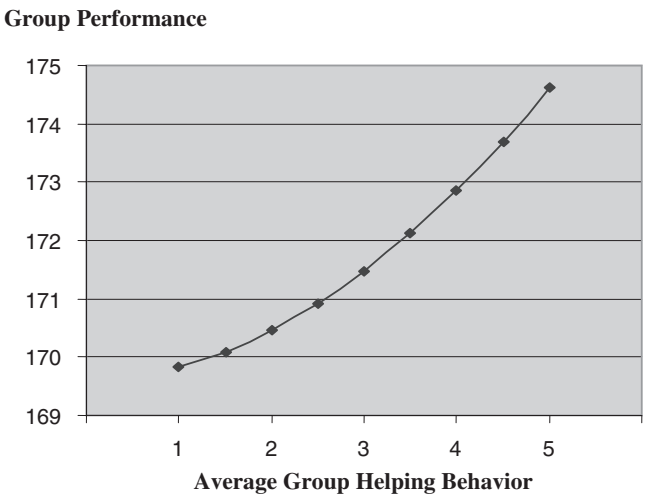

Figure 3: Post Hoc Analysis of Average Group Helping Behavior and Group Performance

behavior in work groups and of the group-level relationships among group-level helping and group performance. In the cross-level model, we examined the relationships among three group characteristics (cohesion, cooperative norms, and task conflict) and the helping behavior of individual group members. In the group-level model, we examined group performance as a function of group-level helping. In assessing this model, we enriched the existing conceptualizations of group-level helping by considering configural conceptualizations of helping. We elaborate on our findings for the two models below and discuss the implications of our results.

CROSS-LEVEL MODEL OF GROUP CHARACTERISTICS AND INDIVIDUAL HELPING

As predicted, results demonstrated that individuals in groups with high cohesion, strong cooperative norms, and low task conflict were described by their peers as displaying greater helping behavior. Although these findings constitute no surprise, they represent one of the first systematic attempts to examine the concurrent cross-level relationships among these three group characteristics and individual helping behavior. At the same time, we would like to acknowledge that our cross-sectional design prevents us from making strong inferences about the direction of causality between the contextual

factors and helping behavior. Nonetheless, we believe our findings provide preliminary insights for some practical recommendations.

Specifically, our findings suggest that there are several ways for managers to promote helping behavior in their employees. One way is to enhance group cohesion, perhaps by setting explicit group goals, designing interdependent tasks, facilitating positive social interaction, or providing supportive leadership (Cartwright, 1968). Another approach is to develop and reinforce expectations or norms for cooperation in the group. Theoretically, the best time to establish cooperative norms is during initial socialization, such as in the encounter (Louis, 1980) or forming stage (Tuckman & Jensen, 1977). Instilling clear expectations during socialization should result in greater internalization such that individuals view helping as in-role rather than extrarole and, consequently, will be more likely to exhibit helping behavior (Morrison, 1994). A third way to facilitate individual helping is to discourage task conflict among group members, which is otherwise particularly likely to occur in groups in the storming stage of their development (Tuckman & Jensen, 1977). We suggest, however, that this intervention should be used with caution because excessively low task conflict can decrease group effectiveness, especially if the task is nonroutine (Jehn, 1995) or if the environment is dynamic (Van Dyne et al., 1995). In the long run, having more supportive behaviors at the expense of task conflict may prove to be counterproductive.

The contrasting strength of the relationships among the three group characteristics and individual helping may be one of our most insightful findings. Here, we refer to results of our usefulness analyses that suggest instilling cooperative norms is more strongly related to individual-level helping than group cohesion or task conflict. In retrospect, we do not find this surprising given the probable mechanisms through which each of these group characteristics relate to helping behavior. We reason that cooperative norms may have the most direct link to helping because they establish behavioral expectations that specifically encourage cooperation. In contrast, high cohesion and low task conflict may be less direct because they foster positive affect and social exchanges, which in turn are related to helping. We note, however, that an alternative explanation could be that helping behaviors in the group drive group members' perceptions of cooperative group norms more directly than they drive perceptions of group cohesion and conflict. Thus, future research designs should test the relative strength of these relationships in experimental designs that can address issues of causal direction more definitively.

GROUP-LEVEL MODEL OF HELPING AND GROUP PERFORMANCE

This model examined relationships among group-level helping and group-level performance. A unique aspect of our study is extending the treatment of group-level helping beyond a simple shared conceptualization of average helping in the group to also include configural conceptualizations of group helping.

An interesting insight arising from our configural approach is the relationship between group performance and the variability of helping behavior among team members. Our results demonstrate that the groups with the greatest disparity in helping behavior performed worse than did groups with less disparity. This suggests that variability of helping behaviors within the group is especially important in affecting team performance. For instance, we observe that although groups with the greatest variability (i.e., low minimum and high maximum helping behaviors) had a higher average level of helping behavior (mean helping behavior = 4.46) compared to groups with low minimum and low maximum helping behaviors (mean helping behavior = 4.19), they performed significantly worse than the latter. This observation is also consistent with our finding that average helping behavior was not related to group performance in a straightforward, linear manner (H4).

Taken together, these findings offer some significant insights by demonstrating that the traditional approach of aggregating individual helping behavior may overlook important issues of group dynamics that occur when members contribute extremely low and high levels of helping. Thus, a practical implication arising from this finding is to minimize the spread of helping behaviors within the group, particularly when the group task is conjunctive in nature. One approach, as suggested by Hackman (1992), is to provide ambient stimuli that encourage members to help. Instilling cooperative norms, for instance, should promote more uniformity in helping behaviors by setting clear expectations to help. This inference ties back to our earlier finding that cooperative norms had the strongest relationship with individuals' helping behaviors.

Our final observation focuses on the unexpected finding of a curvilinear relationship between average group-level helping and group performance. The post hoc analysis suggests the intriguing possibility of a synergistic relationship between average group-level helping and group performance (i.e., an upward concave curve). Perhaps the high task interdependence in our groups caused a disproportionate increase in group performance for every unit of increased helping. This is an interesting issue that should be addressed in future research.

CONTRIBUTIONS, LIMITATIONS, AND FUTURE RESEARCH

To summarize, our study contributes to the theoretical development of the helping literature by furthering existing knowledge of the cross-level relationships among group context and individual helping and by furthering existing knowledge of the group-level relationships among helping and group performance. Based on our results, we have suggested several ways in which organizations can promote helping behavior of group members. Nonetheless, we have also cautioned that encouraging helping behavior of group members may sometimes have adverse effects, such as when it is achieved at the expense of task conflict or when excessive helping interferes with the functioning of team members. In short, the relationship between helping and performance is complex and is not monotonically increasing.

Several methodological issues merit brief discussion. A key strength of our study is the multilevel approach to helping behavior. Besides highlighting the conceptual importance of incorporating cross-level contextual influence into research on groups, we adopted HLM, a technique specifically tailored to address methodological concerns of multilevel data, to analyze our data. The large number of groups ($N = 176$) facilitated our use of HLM and reinforced confidence in our statistical inferences.

A weakness of our data, however, is the ceiling effect evidenced in the ratings of helping behavior—a common problem with observer ratings. As noted by Alliger, Hanges, and Alexander (1988), observer ratings often tend toward the high (positive) end of the scale due to so-called leniency error (the tendency for people to rate others above the middle of the scale). As a result, there is a restriction-of-range in the data (*SD* of helping ratings = .51), which may have suppressed the effect sizes of some empirical relationships.

The unique context of our study (student groups) should also raise external validity questions, and readers must be careful not to overgeneralize results. However, the groups in our study, short-term project teams working on intellectual rather than production tasks, possessed many attributes of self-managing. Specifically, these groups determined individual member task assignments, had a whole piece of work, were responsible for their own functioning (e.g., scheduling and quality control), and received group-level outcome and performance feedback (Pearce & Ravlin, 1987; Wall, Kemp, Jackson, & Clegg, 1986).

Overall, we recommend that future research continue to expand the nomological network of helping behavior in work groups with an emphasis on cross-level relationships. We also urge researchers to continue testing configural conceptualizations of group-level helping in different types of

groups with various degrees of task interdependence, such as disjunctive or additive tasks, to further examine potential contributions of this approach. Finally, we recommend that future research continue to integrate existing group theory into the OCB and into helping literatures. Such an integration could advance the theoretical development in both domains and could also offer timely contributions to practice.

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