Personality and teamwork behavior in context: The cross-level moderating role of collective efficacy

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Summary
This research examines whether the relationship between an individual’s personality and their behavior within a team is contingent on the team’s overall perception of its capability. Individuals were peer-rated on the extent to which they displayed interpersonal and performance management teamwork behaviors over the course of an 8 week business simulation. The personality trait of agreeableness predicted interpersonal teamwork behavior, while the personality traits of conscientiousness and core self-evaluation (CSE) predicted performance management behavior. Multilevel analysis showed that collective efficacy influenced the extent to which an individual engaged in both types of behavior, and was also a cross-level moderator of the relationship between agreeableness and interpersonal behavior and the relationship between CSE and performance management behavior. At the team level, interpersonal behavior mediated between collective efficacy and team performance. The study’s results show that in team settings the personality and individual behavior relationship may depend on group level confidence perceptions. Copyright © 2010 John Wiley & Sons, Ltd.

With the increasing usage and visibility of teams in organizations, management researchers have sought not only to isolate the conditions in which team structures contribute to organizational performance, but also the central individual- and team-level factors that drive team performance (Ilgen, Hollenbeck, Johnson, & Jundt, 2005). In addition, there is growing awareness that teams are inherently multilevel phenomena (Klein & Kozlowski, 2000). A multilevel view of teams recognizes, for example, that individual team member traits can influence team-level processes in a “bottom-up” manner (e.g., Barrick, Stewart, Neubert, & Mount, 1998). Conversely, organizational and situational factors, such as reward structures or leadership climate (e.g., Chen & Bliese, 2002), can have a “top-down” influence on team-level and individual-level processes and behavior that occur within teams.

This study takes a multilevel approach to examine the possibility that the relationship between an individual’s personality and their behavior within a team is contingent on the team’s perception of its capability. This shared perception of team capability, known as collective efficacy, has been defined as “a group’s belief in their conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments” (Bandura, 1997, p. 477). Efficacy beliefs are so central to...
motivation that they, along with goals, have been described as constituting the “motivational hub” (Locke, 1991) of human performance. Research on teams has consistently supported this view, as there is mounting evidence that collective efficacy is associated with team performance (Gully, Incalcaterra, Joshi, & Beaubien, 2002; Stajkovic, Lee, & Nyberg, 2009).

A substantial volume of research has also emerged on the role of personality in teams, and much of this research has centered on the relationships between personality traits, under different forms of compilation, and team performance (e.g., Barrick et al., 1998). Thus, we know a great deal about how personality composition, such as the average of, or variance between, team members’ scores on a trait relates to team outcomes (Bell, 2007). What we know less about, however, is how individual personality and team-level characteristics (such as collective efficacy) interact to influence how individuals behave in teams. This study focuses on linkages between personality traits and individual behavior, rather than team-level composition effects because although research on team composition has demonstrated that team member personality is associated with team performance, it has provided less insight into the mediating processes through which personality is linked to performance (a noteworthy exception is a study by Stewart, Fulmer, & Barrick, 2005).

One of the primary ideas we advance is that collective efficacy, which is a team-level emergent state, influences the relationship between individual traits and individual behavior. As we discuss below, collective efficacy exerts cross-level effects on the relationship between personality and behavior by encouraging (or discouraging) the display of trait-relevant behaviors. Treating collective efficacy as a variable that contextualizes individual personality to behavior relationships is consistent with the definition of context put forth by Johns (2006); specifically, that context refers to “situational opportunities and constraints that affect the meaning of organizational behavior as well as the functional relationships between variables” (p. 386). Our approach is also supported by several recent reviews, which have observed that despite the enormous body of literature on teams, there is still a sizable gap in our knowledge of the role that team-level contextual factors play in shaping team processes and performance (e.g., Ilgen et al., 2005; Kozlowski & Bell, 2003; Mathieu, Maynard, Rapp, & Gilson, 2008).

Figure 1 depicts the theoretical relations we examine. We begin at the individual level, focusing on three personality traits—core self-evaluation (CSE), conscientiousness, and agreeableness—as antecedents of two dimensions of teamwork behavior—performance management behavior and interpersonal teamwork behavior. We posit that the personality variables will differentially predict these two dimensions of teamwork behavior, with CSE and conscientiousness predicting performance management behavior, and agreeableness predicting interpersonal behavior. Then, drawing upon the theoretical perspectives of trait-based interactionism, team-level emergent states, and multilevel theory, we examine the influence of collective efficacy as both a top-down predictor of teamwork behavior and a cross-level moderator of the personality to behavior relationships. Finally, we suggest that both forms of teamwork behavior act as a linking mechanism which, when aggregated to the team level, will influence team performance and mediate the relationship between collective efficacy and performance. The theoretical basis for these predictions is explained next.

**Theoretical Background and Hypotheses**

**Teamwork behavior**

Teamwork behavior has been described as activities that are devoted to enhancing the quality of the interactions, interdependencies, cooperation, and coordination of teams (Morgan, Salas, & Glickman,
During interactions between team members, teamwork behavior takes the form of overt actions and verbal statements that contribute to the coordination demands of the team’s task (Rousseau, Aube, & Savoie, 2006). For example, a team member would be engaging in teamwork behavior when they steer their fellow team members toward on-topic conversations, suggest setting time deadlines for completing tasks, or attempt to resolve a conflict within the group. Tasa, Taggar, and Seijts (2007) found that teamwork behaviors contribute to team performance in an additive fashion, suggesting that efforts to encourage higher amounts of these behaviors are warranted.

Teamwork behaviors are conceptually distinct from “taskwork.” Morgan et al. (1993) described taskwork as team members’ efforts that are “devoted to understanding the task requirements, discovering the “rules” by which the tasks are to be performed, establishing the patterns of interaction with equipment, exchanging task-related information, developing team solutions to problems, and so forth” (p. 283). Thus, taskwork represents the technical performance of the team’s task, whereas teamwork behavior and team processes are used to direct, align, and monitor taskwork (Marks, Mathieu, & Zaccaro, 2001). To illustrate, the taskwork of a surgical team includes the tasks carried out to complete a surgical procedure, such as patient preparation, use of anesthesia, and suturing incisions. On the other hand, teamwork behaviors in a surgical team might include individual activities such as the identification of goals, suggestions for improving coordination, and efforts to resolve conflict, all of which help to ensure that the patient is effectively prepared for surgery, anesthesia is appropriately administered, and incisions are properly sutured.

Teamwork behaviors can take several forms. Stevens and Campion (1994) argued that individual teamwork competencies could be divided into two broad categories, interpersonal and self-management. The interpersonal dimension includes such competencies as conflict resolution and communication, whereas self-management includes task coordination and performance management. Similarly, Barry and Stewart (1997) classified individual contributions to teamwork as socioemotional
inputs and task inputs, while Stewart et al. (2005) focused on social and task roles. Although the labels researchers use to describe the dimensions may be different, there is general agreement that interpersonal and task-focused teamwork behaviors are distinct. Accordingly, we focus on these two dimensions in the present study, and refer to them as interpersonal teamwork behavior and performance management teamwork behavior.

**Personality and teamwork behavior**

In their trait-based interactionist model of job performance, Tett and Burnett (2003) argued that trait expression holds inherent intrinsic value and individuals are more motivated and likely to express their traits when they are presented with cues in the work environment that facilitate trait expression. As such, some people possess personality attributes that predispose them to engage in certain types of teamwork behavior. Our choice of personality traits to focus on in this study was guided by two primary considerations: (1) the degree to which a trait would predict teamwork behavior, and (2) the theoretical likelihood that a trait’s relationship to teamwork behavior would be moderated by collective efficacy. Below we explain the hypothesized relationships between our focal personality constructs (conscientiousness, core-self evaluation, and agreeableness) and the two dimensions of teamwork behavior. Then, we explain how collective efficacy will influence these relationships.

**Conscientiousness**

Individuals possessing higher levels of conscientiousness tend to be: “responsible, careful, persevering, orderly, cautious, planful, hardworking, and achievement-oriented” (Mount & Barrick, 1995, p. 164). Conscientious individuals exhibit higher levels of goal-directed behavior and work motivation (Judge & Ilies, 2002), are more willing to take on extra work (e.g., Podsakoff, MacKenzie, Paine, & Bacharach, 2000), and tend to function effectively in unstructured roles (e.g., Barrick & Mount, 1993). Due to their task focus, achievement-orientation, and proclivity for imposing more structure on their work environments, individuals higher in conscientiousness may be expected to engage in performance management teamwork behaviors, such as establishing team goals, coordinating tasks with other team members, and monitoring progress toward the attainment of team objectives.

**Core self-evaluation**

CSE refers to the fundamental, subconscious conclusions individuals reach about themselves, other people, and the world (Judge, Erez, & Bono, 1998). Four broad traits combine to form the CSE construct: self-esteem, generalized self-efficacy, emotional stability, and locus of control (e.g., Judge & Bono, 2001; Judge, Erez, Bono, & Thoresen, 2003). As reflected in these traits, CSE contains strong work motivation and ability components (Judge et al., 1998). CSE has been shown to relate to both goal-setting behavior and task performance (Erez & Judge, 2001) and predict both motivation and performance beyond the effects of the Big Five constructs (Erez & Judge, 2001; Judge et al., 2003).

In a recent review of the CSE construct, Johnson, Rosen, and Levy (2008) underline that CSE reflects an individual’s basic beliefs about their self-regulatory and behavioral capacities. We suggest it is through these broad, fundamental appraisals of an individual’s performance capabilities that CSE is associated with the display of stronger performance management teamwork behaviors. Studies have shown that individuals with a positive self-concept are more inclined to take active steps to improve their performance in response to negative feedback (e.g., Bandura & Cervone, 1983; Bono & Colbert, 2005), and perform better in the presence of social facilitation (e.g., Sanna, 1992). Certain facets of CSE (e.g., self-esteem) have also been shown to be associated with voice behavior in teams (i.e.,
constructively challenging the status quo/others in the group to improve the situation; LePine & Van Dyne, 1998). More recently, CSE has been directly linked to individuals’ tendency to set and uphold high standards of service quality (e.g., Salvaggio, Schneider, Nishii, Mayer, Ramesh, & Lyon, 2007). Drawing on this work and the premise that CSE reflects a predisposition to engage in goal-directed behavior (e.g., Erez & Judge, 2001; Johnson et al., 2008), we submit that individuals higher in CSE will be more likely to demonstrate teamwork behaviors that encourage performance regulation in the group, such as goal-setting, performance monitoring, and the delivery of performance feedback to other team members.

Agreeableness

Agreeable individuals are cooperative, warm, tactful, courteous, and sincere (Goldberg, 1990). They tend to be straightforward and trusted (Costa & McCrae, 1992) and more likely to demonstrate a prosocial disposition (Penner, Midili, & Kegelmeyer, 1997). In accordance with these attributes, research has shown that agreeable individuals perform effectively in jobs involving considerable social interaction (Witt, Burke, Barrick, & Mount, 2002). Consistent with this premise, Neuman and Wright (1999) reported that team member agreeableness is significantly associated with interpersonal skills measured at both the individual and team levels. Given the stronger social orientation and ability of agreeable individuals to interact with others, one of the means by which agreeableness may influence team performance is through the display of interpersonal teamwork behavior.

The discussion to this point leads to the following hypotheses:

Hypothesis 1: An individual’s performance management behavior is positively predicted by his or her level of (a) conscientiousness, and (b) CSE.

Hypothesis 2: An individual’s interpersonal teamwork behavior is positively predicted by his or her level of agreeableness.

Collective efficacy and individual teamwork behavior

Cross-level relationships

A vast amount of research has shown that groups with high levels of collective efficacy outperform groups with low levels of collective efficacy, especially when task interdependence is high (Gully et al., 2002; Stajkovic et al., 2009). High efficacy groups and low efficacy groups differ in several ways. According to Bandura (1997), collective efficacy can “influence the type of future (people) seek to achieve, how they manage their resources, the plans, and strategies they construct, how much effort they put into their group endeavor, their staying power when collective efforts fail to produce quick results or encounter forcible opposition, and their vulnerability to discouragement” (p. 418). Thus, collective efficacy is associated with traditional motivational mechanisms such as direction, effort, and persistence.

These assertions, and in general most of the research on collective efficacy (also labeled “group efficacy” or “team efficacy”) examines relationships between group perceptions and aggregate group processes. For example, collective efficacy has been shown to relate to group cohesion (Lee, Tinsley, & Bobko, 2002; Lent, Schmidt, & Schmidt, 2006) and group cooperation and communication (Lester, Meglino, & Korsgaard, 2002). The camaraderie associated with elevated team confidence can also be expected to increase an individual’s likelihood of engaging in interpersonal behaviors. Assuming that individuals have at least some choice over the degree to which they engage in both interpersonal and performance management behavior, it appears that collective efficacy at the team level will influence this choice.
Only a few multilevel studies have linked collective efficacy with individual outcomes, such as perceptions of self-efficacy (e.g., Chen & Blyse, 2002) or teamwork behavior (e.g., Tasa et al., 2007). As Chen and Kanfer (2006) have noted, members of a team who believe in the team’s collective capabilities are more likely to be motivated to work individually on tasks that contribute to team success. In contrast, they also note that “…individuals who are personally efficacious and empowered are unlikely to exert as much effort on behalf of their team if they believe their team is incapable of handling challenging tasks (p. 249).” These observations are consistent with the theoretical arguments of Lindsley, Brass, and Thomas (1995), who noted that such cross-level effects are possible because efficacious teams create a context in which constructive individual behaviors are expected. Therefore, we test the notion that collective efficacy will influence both dimensions of teamwork behavior in a positive manner.

**Hypothesis 3**: The initial level of collective efficacy in a team will positively predict an individual’s (a) interpersonal teamwork behavior and (b) performance management behavior.

**Cross-level moderation**

We also propose that collective efficacy influences the relationship between individual traits and individual behavior. In order to explain our hypotheses regarding cross-level moderation, it is necessary to first elaborate on the differences between groups with high collective efficacy and groups with low collective efficacy.

The motivational underpinnings of self- and collective efficacy are well documented (Bandura, 1997). Groups characterized by high collective efficacy are likely to have high performance expectations, work hard, and persist in the face of obstacles. High efficacy teams are generally positive environments that are characterized by engagement, camaraderie, and cohesion (Gibson & Earley, 2007; Lent et al., 2006).

Conversely, groups characterized by low collective efficacy are more likely to experience apathy, uncertainty, and a lack of direction (Bandura, 1997; Gibson & Earley, 2007). Research has shown that the dysfunctional characteristics associated with low efficacy include heightened anxiety (Bandura, 1997), greater social loafing (Mulvey & Klein, 1998), and less vigilance in decision-making processes (Tasa & Whyte, 2005). Because collective efficacy has strong motivational properties, we propose that it will affect the direction, effort, and choices made by individuals in groups.

A theoretical perspective on the interaction effect of collective efficacy and individual traits on individual behavior is offered by Tett and colleagues, who in their trait-based interactionist model (Tett & Burnett, 2003) argue that trait activation (or “trait relevance”) is a central impetus underlying trait expression. Specifically, trait activation is the principle that “behavioral expression of a trait requires arousal of that trait by trait-relevant situational cues” (Tett & Guterman, 2000, p. 398). The level of collective efficacy in a group is one such “situational cue” that could influence whether a trait is activated and behaviorally expressed. Whether high or low collective efficacy activates or suppresses individual trait expression depends on the trait and the type of teamwork behavior. Because we expect that collective efficacy will affect the relationships between personality and behavior differently for performance management and interpersonal behaviors, we discuss them separately, beginning with performance management behaviors.

**Performance management behavior**

The task-focused nature of performance management behavior, which encompasses behaviors such as setting deadlines and steering conversations toward the task, aligns positively with high collective efficacy. A team that is highly motivated and sure of its collective capabilities would uniformly encourage team members to engage in performance management behaviors, regardless of their levels of conscientiousness and CSE. Thus, we expect that high collective efficacy would tend to mitigate the
extent to which these traits would actually relate to performance management behavior. Meta-analytic evidence has also furnished some support for this perspective. Meyer, Dalal, and Bonaccio (2009) reported that situational strength moderates the relationship between employee’s conscientiousness and their job performance. Specifically, they found that conscientiousness was more strongly related to job performance in occupations with fewer constraints on performance-related behavior.

Conversely, groups characterized by low collective efficacy are more likely to experience low levels of motivation, thereby creating an atmosphere that neither encourages nor discourages performance management behaviors. We hypothesize that low collective efficacy teams have greater freedom for individual expression than teams with high collective efficacy. Thus, individual differences that relate to performance management behavior would be expected to emerge as stronger determinants of individual behavior when efficacy is low. In particular, individuals high in conscientiousness and CSE, who are naturally inclined to engage in task-focused (i.e., performance management) behaviors, will be more likely than those low in conscientiousness or CSE to engage in behavior that is consistent with these traits when the team lacks confidence. This expectation is affirmed by the principle of trait activation (Tett & Burnett, 2003; Tett & Guterman, 2000). In particular, the nature of the task we used in this study (a team project that accounted for a significant proportion of individual course grades) contains “cues” that would activate traits such as conscientiousness and CSE, even if the group’s (low) level of collective efficacy does not strongly demand performance management behaviors. If, however, individuals demonstrate low levels of conscientiousness or core-self-evaluation, and therefore lack motivation and commitment to improving their task performance, they will be less likely to engage in performance management behaviors unless the team provides the motivational context encouraging such behavior (i.e., high collective efficacy). Thus, drawing on the principle of trait activation (Tett & Burnett, 2003; Tett & Guterman, 2000) and the contextualizing influence of collective efficacy, we propose that individuals higher in conscientiousness and CSE will be more likely than individuals low on these traits to engage in performance management behavior, particularly in a low collective efficacy group.

Hypothesis 4: Collective efficacy will moderate the relationship between (a) conscientiousness, and (b) CSE, and performance management behavior, such that the positive relationship between personality and performance management behavior is stronger when collective efficacy is low.

Interpersonal teamwork behavior
For interpersonal teamwork behavior, which includes behaviors that contribute to the social and relational quality of interactions between team members (e.g., listening to others, using humor create a positive team atmosphere), the role of collective efficacy in moderating the effects of personality on teamwork behavior should be viewed differently. Earlier we argued the low collective efficacy would tend to magnify the relationship between the traits of conscientiousness and CSE with performance management behavior. For the relationship between agreeableness and interpersonal teamwork behavior we expect the opposite pattern.

Our reasoning rests less on the task-specific motivational properties associated with collective efficacy and more on the general team atmosphere created by high or low levels of collective efficacy. Recall that high collective efficacy is associated with cohesion and engagement. In line with the notion of trait activation, such an atmosphere may be expected to activate and accentuate the natural inclinations of an agreeable or tolerant person to be helpful and cooperative. These individuals also tend to be well-attuned and more responsive to environmental cues (Costa & McCrae, 1992; Driskell, Goodwin, Salas, & O’Shea, 2006; McCrae & Costa, 1997). Thus, it is plausible that high collective efficacy will strengthen linkages between an individual’s level of agreeableness and their display of interpersonal behaviors.
In contrast to the high efficacy situation, the general apathy and pessimism associated with low efficacy is likely to discourage (or fail to encourage) team members from engaging in interpersonally functional behaviors. The negative atmosphere in low collective efficacy teams would have a dampening effect on an agreeable person’s tendency to engage in interpersonal teamwork behavior. Accordingly, collective efficacy is posited to moderate the relationship between agreeableness and interpersonal teamwork behaviors, such that these relationships are amplified in teams with high collective efficacy.

**Hypothesis 5**: Collective efficacy will moderate the relationship between agreeableness and interpersonal teamwork behavior, such that the positive relationship between them will be stronger when collective efficacy is high.

**Collective efficacy, teamwork behavior and team performance**

According to the traditional input-process-outcome model of team performance, outcomes are partly a function of the processes and interactions that occur between team members. Teamwork behaviors are frequently cited as central mechanisms leading to team performance (e.g., Cannon-Bowers, Tannenbaum, Salas, & Volpe, 1995; Driskell et al., 2006). In light of past theorizing on linkages between team functioning and outcomes, team member displays of interpersonal and performance management teamwork behaviors should be positively associated with team performance. Therefore, aggregated levels of interpersonal and performance management behavior are expected to predict team performance.

The positive association between collective efficacy and performance is also well established (e.g., Gully et al., 2002). However, as others have noted (e.g., Bandura, 1997; Tasa & Whyte, 2005), social cognitive theory proposes that efficacy perceptions can influence outcomes not only directly, but also through their effects on the behaviors and processes that have a bearing on task performance. Past research has shown that group process variables such as communication and decision-making processes (Lester et al., 2002; Tasa & Whyte, 2005) mediate between efficacy and outcomes. In a similar vein, we expect that collective efficacy will be associated with teamwork behaviors and that teamwork behaviors will mediate the collective efficacy to performance relationship. Therefore, we propose the following:

**Hypothesis 6**: (a) Aggregated interpersonal teamwork behavior and (b) aggregated performance management behavior will mediate the relation between collective efficacy and team performance.

**Method**

**Participants**

Participants were 471 business students enrolled in eight sections of an upper-level Human Resource Management (HRM) course. The eight sections were taught over a 2-year period by two instructors using an identical course outline and exams. Both instructors were blind to the study’s hypotheses. Participants were assigned to teams ($N = 124$) of three or four individuals randomly by drawing names from major-specific lists (e.g., finance, marketing, and engineering) in sequence. The purpose was to maximize the breadth of within-team expertise and reduce the potential for self-selection bias. In total, 78 per cent of the participants were enrolled in the business program, and 22 per cent were in a
combined engineering and management program. The average age of the participants was 21.4 years ($SD = 1.0$), and 57 per cent of the participants were male.

Participation in the study was voluntary and participants received a 2 per cent bonus mark in exchange for completing questionnaires on two occasions. The response rates to the questionnaires we distributed at weeks 2 and 7 were 91 per cent and 92 per cent, respectively. Ten of the three-person teams were dropped from the sample because in these teams at least one member did not respond to a survey. We did so because the peer-rated measures of teamwork behavior cannot be assessed for inter-rater agreement when a person is rated by only one other person. Although the conclusions about our tests of hypotheses, reported below, remain the same with or without the deleted teams, we note that the tests are based on the reduced sample. We retained 114 teams, consisting of 92 four-person groups and 22 three-person groups. The response rate for the final sample, at both week 2 and 7, was 96 per cent.

Simulation and procedures

We studied the teams as they worked on an 8-week simulation called the Human Resource Management Simulation (Smith & Golden, 2001), which began following the third week of the course. The simulation creates a realistic context in which students must translate course content, covering such issues as selection and reward systems, into team solutions and decisions to improve the performance of the HRM department. Both instructors informed participants that performance on the simulation would largely be determined by the extent to which they were able to discern linkages among the various HRM topics covered in the course.

This simulation has been used in past research on teams (e.g., Tasa et al., 2007). However, in this study, participants completed a wider range of tasks, and these tasks accounted for a substantial component of their grade. The entire simulation project was worth 25 per cent of a participant’s final grade and this grade was shared equally among team members. The 25 per cent was divided into three components: 4 per cent for rankings determined by the simulation; 6 per cent for written responses to mini-cases handed in during each decision period; and 15 per cent for a final written report. The mini-cases and the final written report were each graded by a doctoral-level teaching assistant who was unfamiliar with the hypotheses or purpose of the study. Individual team members had an incentive to actively participate because there was an opportunity to complete, at the end of the simulation, an anonymous peer evaluation that may result in grade deductions for individuals who received poor evaluations. This occurred in very few instances; in all other teams, members received the same grade.

Teams assumed the role of the HRM department in a manufacturing organization and were required to make weekly operational decisions on issues such as wage increases or decreases, hiring, benefits, performance appraisal, and training. One-third of the class time in each week (50 minutes) was given to participants to work on the simulation. They submitted their decisions on a standardized form and these decisions were then entered into a computer program by the course instructor. Each weekly set of decisions corresponded to one-quarter of a simulated fiscal year. Teams were given an equal yearly budget and thus had to make their decisions under constraints of finite resources. The mini-cases were also submitted on a single page. These cases required the team to justify their response to a simulation-specific decision, such as the type of performance appraisal method to use. Each team performed the simulation for 6 simulated quarters (or 1.5 fiscal years) over the 8-week period. No simulation decisions were made during week 3 due to midterm exams and week 6 due to other classroom activities.

Weekly performance feedback was primarily quantitative, including such indicators as employee morale, product quality, productivity, employee turnover, budget surpluses or deficits, and the number of grievances filed in the simulation. For each indicator, the teams were provided with both their own
scores as well as the average scores of other teams in their industry. The grades for the mini-cases were returned prior to the next decision period.

**Measures and timing**

**Teamwork behavior**
Peer appraisals were used to assess the two dimensions of teamwork behavior. The items were drawn from a behavioral observation scale (BOS) developed by Taggar and Brown (2001), which was derived from critical incidents of observed performance-relevant team member behaviors displayed in student teams. Participants were asked to rate the frequency with which each of their fellow team members engaged in the behaviors during the simulation. Participants did not rate their own behavior. Eight items were used to assess interpersonal behavior and ten items were used to assess performance management behavior. Sample items for *interpersonal behavior* include, “carefully listens to what others are saying,” “uses humor to create a positive team atmosphere,” and “asks other team members what they think.” Sample items for *performance management behavior* include, “set time deadlines for achieving tasks,” and “steer team members toward on-topic conversations.” Scale scores could range from 1 (“almost never”) to 7 (“almost always”) and item-scores were averaged to derive a composite behavioral measure for each individual on each dimension. The coefficient $\alpha$ for the interpersonal behavior and performance management scales were 0.87 and 0.93, respectively. To assess the level of inter-rater agreement on the behavioral ratings, we calculated the $r_{wg}$ coefficient (James, Demaree, & Wolf, 1984) for each participant on each of the 18 behavioral items. The average coefficient across all ratings and participants was 0.82 with a range of 0.35. Over 95 per cent of all $r_{wg}$ coefficients were above the commonly used 0.70 threshold (see Castro, 2002). These results support the conclusion that individuals agreed on the extent to which other team members displayed the two dimensions of teamwork behavior.

**Personality traits**
Conscientiousness and agreeableness were assessed with 7 items each from Goldberg’s (1999) International Personality Item Pool (IPIP) Big Five scale. Sample items include, “Continue until everything is perfect” for conscientiousness, and “Am interested in other people” for agreeableness. Using a seven-point Likert scale (from “strongly inaccurate” to “strongly accurate”), respondents indicated the extent to which each item accurately described themselves. Coefficient $\alpha$ was 0.76 for conscientiousness and 0.80 for agreeableness.

CSE was measured with the 12-item Core Self-Evaluation Scale (CSES; Judge et al., 2003). Scale items include: “When I try, I generally succeed” and “Overall, I am satisfied with myself”. Participants were asked to indicate the extent to which they agreed with each item in accordance with a seven-point Likert scale (from “strongly disagree” to “strongly agree”). Coefficient $\alpha$ was 0.84.

**Collective efficacy**
Consistent with Bandura’s (1997) recommendations, and previous empirical research (Tasa & Whyte, 2005), we developed a measure of collective efficacy that assessed both magnitude and strength for achieving progressively more difficult team performance levels. Participants rated the extent to which they believed their team could finish the simulation ranked at increasingly difficult levels (e.g., “I believe that the team can finish the simulation in at least the top 10 teams”). Collective efficacy magnitude was operationalized as the total number of “Yes” answers to the 11 performance levels (“Yes” = 1, and “No” = 0). Collective efficacy strength was the sum of the rating scores across the eleven performance levels. The ratings were made in terms of a continuous 100-point scale (0 = “no
confidence at all,” and 100 = “complete confidence”). The correlation between the magnitude and strength scores was high \((r = 0.81, p < 0.01)\), and therefore the sums of the magnitude and strength scores were independently standardized, then summed, to create the measure of collective efficacy.

**Team performance**
The measure of team performance was the grade each team received on the simulation, expressed out of 100.

**Timing of data collection**
Collective efficacy was assessed at week 2 of the simulation. We measured collective efficacy at week 2, rather than at the time of group formation, to allow individuals to become familiar with their team members, their team roles, and the nature of the simulation. By this point teams had made two rounds of simulation decisions, handed in and received feedback on one mini case, and worked together as a team for approximately 4 hours. Personality traits were also assessed at week 2. Interpersonal behavior and performance management behavior were assessed near the end of the simulation (week 7) to ensure that participants had attained experience with the task and had ample time to observe their fellow team members.

**Aggregation of group-level variables**
A meta-analysis by Gully et al. (2002) found that the observed relationships between collective efficacy and team performance were substantially stronger when collective efficacy was treated as a group-level construct versus an individual-level construct. Therefore, collective efficacy was measured at the individual level and subsequently aggregated to represent a group-level construct. According to Chan (1998), a referent-shift consensus model is a composition model in which individual ratings of a higher level phenomenon are used to represent the higher level construct. To be theoretically valid, such models must contain a suitable degree of within-group agreement (Chan, 1998; Gibson, Randel, & Earley, 2000). As suggested by Bliese (2000), we computed intra-class correlations (ICC) to determine the reliability of the team-level measure. The ICC(1) coefficient, which represents the degree of variability in responses at the individual level that is attributed to team membership, was 0.39. The ICC(2) coefficient, which represents the reliability of the team-level means, was 0.72. These results show that collective efficacy displayed an appropriate degree of within-group agreement relative to between-group variance, and thus support aggregation of individual-level data to the team level (Klein & Kozlowski, 2000).

Interpersonal teamwork behavior and performance management behavior were both aggregated to test the hypothesis that these team-level variables mediate between collective efficacy and team performance. Because we are concerned with assessing the degree to which these behaviors are exhibited, in aggregate, within the team, these measures conform to what Klein and Kozlowski (2000) refer to as configural constructs. Specifically, they say, “Constructs of this type capture the array, pattern, or configuration of individuals’ characteristics within a unit. . . Unlike shared unit properties, however, configural unit properties are not assumed to coalesce and converge among the members of a unit” (p. 30). Thus, our two aggregated measures of teamwork behavior capture the extent to which they were enacted as a whole, irrespective of whether or not team members agreed about them. Our approach to aggregation is also consistent with what Chan (1998) referred to as an additive aggregation composition model. Although such models do not require inter-rater agreement, we conducted one-way analysis of variance and found between groups variance for each dimension of teamwork behavior to be significant at the 0.001 level. We therefore concluded that aggregation was justified.
Results

Table 1 presents descriptive statistics and bivariate correlations among study variables at the individual and team levels. Each of the reported correlations is in the expected direction. We also tested for mean differences between instructors for all the study variables and found no significant differences.

We used confirmatory factor analysis to assess the possibility that the five individual level measures (three personality traits and two teamwork behaviors) were not distinct. The models we tested included (a) a one-factor model, ($\chi^2 (N = 44, df = 902) = 3682.04, p < 0.001; CFI = 0.62, IFI = 0.64, RMSEA = 0.26$) (b) a three-factor model in which the three personality variables loaded on one factor, ($\chi^2 (N = 44, df = 899) = 3804.87, p < 0.001; CFI = 0.68, IFI = 0.68, RMSEA = 0.23$) (c) a two-factor model in which each of the teamwork behaviors loaded separately from the personality measures, ($\chi^2 (N = 44, df = 901) = 3567.22, p < 0.001; CFI = 0.67, IFI = 0.67, RMSEA = 0.22$) (d) a four-factor model in which the teamwork behavior items loaded onto a single factor, ($\chi^2 (N = 44, df = 898) = 2462.34, p < 0.001; CFI = 0.79, IFI = 0.80, RMSEA = 0.09$), and (e) the hypothesized five-factor model. The hypothesized model with five distinct factors had better fit indices ($\chi^2 (N = 44, df = 897) = 462.21, p < 0.01; CFI = 0.97, IFI = 0.96, RMSEA = 0.02$) than each of the other models, thereby supporting the uniqueness of the five constructs.

Because the dependent variables in hypotheses one and two were at the individual level, and the independent variables were both individual and team level, we analyzed the data using hierarchical linear modeling (HLM 5) (Bryk & Raudenbush, 1992). As suggested by Hofmann, Griffin, and Gavin (2000), it is necessary to test for significant between-group variance before testing full models. Therefore, we first tested null models that had no predictors at either level 1 (the individual level) or level 2 (the team level). These null models are analogous to an analysis of variance in that they partition variance in teamwork behavior into within- ($\Phi^2$) and between-team ($\tau$) components. The estimate of between-team variance is the ICC coefficient and is computed as the proportion of between-teams variance over the total variance ($\Phi^2 + \tau$). For performance management behavior, a test of the significance level of the level 2 residual variance of the intercept ($\tau_{00} = 0.13, p < 0.01$) was significant. Also, the ICC(1) was 0.15, indicating that 15 per cent of the variance in individual performance management behavior resides between teams, and 85 per cent of the variance resided within teams. For interpersonal teamwork behavior, the significance level of the level 2 residual variance of the intercept ($\tau_{00} = 0.44, p < 0.01$) was significant. Also, the ICC(1) was 0.41, indicating that 41 per cent of the

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
<tbody>
<tr>
<td>Individual-level measures</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Conscientiousness</td>
<td>4.89</td>
<td>0.87</td>
<td>(0.76)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Agreeableness</td>
<td>5.27</td>
<td>0.81</td>
<td>0.18**</td>
<td>(0.80)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Core self-evaluation</td>
<td>4.91</td>
<td>0.85</td>
<td>0.18**</td>
<td>0.13*</td>
<td>(0.84)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Interpersonal behavior</td>
<td>4.72</td>
<td>1.02</td>
<td>0.05</td>
<td>0.18**</td>
<td>0.09</td>
<td>(0.87)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Performance management</td>
<td>4.90</td>
<td>0.92</td>
<td>0.15**</td>
<td>0.15**</td>
<td>0.21**</td>
<td>0.53**</td>
<td>(0.93)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team-level measures</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1. Interpersonal behavior</td>
<td>4.73</td>
<td>0.78</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>2. Performance management</td>
<td>4.90</td>
<td>0.57</td>
<td>0.53**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Collective efficacy</td>
<td>0.03</td>
<td>1.22</td>
<td>0.32**</td>
<td>0.17*</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4. Team performance</td>
<td>78.52</td>
<td>7.37</td>
<td>0.23*</td>
<td>0.18*</td>
<td>0.26**</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*For individual-level measures, $n = 434$; for team-level measures, $n = 114$. Numbers in parentheses are coefficient $\alpha$s.

*p < 0.05; **p < 0.01.
variance in interpersonal teamwork behavior resided between teams, and 59 per cent of the variance resided within teams. In each case, the significant between-team variance provided justification for testing the full model.

Hypotheses 1 and 2 predict that the two dimensions of teamwork behavior are related to individual-level variables and hypothesis 3 predicts that a team-level variable, collective efficacy, also predicts teamwork behaviors. Therefore, we estimated two HLM models in which the individual-level antecedents were the level 1 predictors and then regressed the intercept coefficient obtained from level 1 on the level 2 variable, collective efficacy. The first model predicts performance management behavior. As Table 2 shows, CSE ($\beta = 0.15$, $p < 0.01$) and conscientiousness ($\beta = 0.14$, $p < 0.05$) demonstrated significant relationships with performance management behavior. These results support hypotheses 1a and 1b. The second model predicts interpersonal teamwork behavior. As hypothesized, agreeableness was significantly related to interpersonal teamwork behavior ($\beta = 0.14$, $p < 0.05$), supporting hypothesis 2. Table 2 also shows that collective efficacy predicted both performance management behavior ($\gamma = 0.45$, $p < 0.01$) and interpersonal management behavior ($\gamma = 0.73$, $p < 0.01$). These results fully support hypothesis 3.

Hypotheses 4 and 5 predict that collective efficacy will moderate the relationship between personality traits and teamwork behaviors. HLM can also be used to test whether a higher level variable significantly predicts the slope between two lower level variables. This is known as a slopes-as-outcomes model (Bryk & Raudenbush, 1992). When testing such models, it is recommended that all variables be grand-mean centered (Gavin & Hofmann, 2002). As Table 2 shows, collective efficacy predicted the core-self evaluation and performance management behavior slope ($\gamma = -0.16$, $p < 0.05$) in the expected direction. Using procedures described by Gavin and Hofmann (2002) to calculate the proportion of between group variance accounted for by a cross-level moderator, we determined that collective efficacy accounted for 8 per cent of the variance in the relationship between CSE and performance management behavior. Cross-level moderation was not supported for the conscientiousness and performance management relationship ($\gamma = -0.10$, $p > 0.10$). These results provide partial support for hypothesis 4. Collective efficacy also was found to moderate the relationship between agreeableness and interpersonal teamwork behavior ($\gamma = 0.27$, $p < 0.05$) in the expected direction. We calculated that collective efficacy accounted for 7 per cent of the variance in the agreeableness and interpersonal teamwork behavior slope, supporting hypothesis 5. Figure 2 graphically shows the nature of the two significant cross-level interactions.

### Table 2. HLM results for performance management and interpersonal teamwork behavior

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t</th>
<th>Coefficient</th>
<th>t</th>
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</thead>
<tbody>
<tr>
<td><strong>Performance management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>4.91** (0.04)</td>
<td>98.75</td>
<td>4.83** (0.06)</td>
<td>72.39</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.14* (0.06)</td>
<td>2.49</td>
<td>0.01 (0.05)</td>
<td>0.10</td>
</tr>
<tr>
<td>Core self-evaluation</td>
<td>0.15** (0.05)</td>
<td>3.19</td>
<td>0.03 (0.05)</td>
<td>0.67</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>0.08 (0.06)</td>
<td>1.56</td>
<td>0.14* (0.05)</td>
<td>2.35</td>
</tr>
<tr>
<td><strong>Interpersonal behavior</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td></td>
<td></td>
<td>4.83** (0.06)</td>
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<td>0.14* (0.05)</td>
<td>2.35</td>
</tr>
</tbody>
</table>

*aEntries are estimations of the fixed effects with robust standard errors. Standard errors are in parentheses.

*p < 0.05; **p < 0.01.
We also performed an analysis of the simple slopes of the two significant interactions using procedures described by Preacher, Curran, and Bauer (2006). This approach identifies critical values above and below the moderator at which simple slopes are statistically significant. The simple slopes for core-self evaluation and performance management were as follows: high collective efficacy (slope = 0.68 (.38), t(375) = 1.91, ns) and low collective efficacy (slope = 1.23 (.27), t(375) = 3.52, p < 0.01). As predicted, these results support the hypothesis that the relationship between CSE and performance management is stronger for those in low collective efficacy groups. For the agreeableness and interpersonal teamwork behavior interaction the slopes were as follows: high collective efficacy (slope = 1.09 (.40), t(375) = 2.03, p < 0.05) and low collective efficacy (slope = −0.21 (.33), t(375) = −1.56, ns). These results support the hypothesis that the agreeableness and interpersonal teamwork behavior relationship is stronger for those in high collective efficacy groups.
Finally, hypothesis 6 proposes a positive relationship between collective efficacy and team performance, and that both dimensions of teamwork behavior would mediate that relationship. Although it is possible to simultaneously test multiple mediators (e.g., Kenny, Kashy, & Bolger, 1998), this is only appropriate when they are conceptually distinct and not too highly correlated. Because the correlation between interpersonal behavior and performance management behavior \( (r = 0.53; \ p < 0.01) \) was significant, we tested the two mediators in separate analyses. We followed the test procedures explained in Kenny et al. (1998) to examine the presence of mediation using regression and performed Sobel’s (1982) test to assess the significance of the indirect effect. The results showed that collective efficacy positively predicted team performance \( (b = 0.26, \ p < 0.01) \). Collective efficacy also predicted interpersonal behavior \( (b = 0.32, \ p < 0.01) \) but did not predict performance management behavior \( (b = 0.15, \ p > 0.10) \). Therefore, the final step of the mediation test was only performed for interpersonal behavior. When collective efficacy and interpersonal behavior were simultaneously tested as predictors of team performance, the collective efficacy to performance relationship significantly reduced in magnitude \( (b = 0.16, \ p > 0.05) \). A Sobel’s (1982) test confirmed that the indirect effect was significant \( (b = 0.14, \ p < 0.05) \). These results show that when the two dimensions of teamwork behavior are aggregated to the team level, interpersonal behavior but not performance management behavior mediates the relation between collective efficacy and team performance.

Discussion

Our study contributes to the research on personality in teams, collective efficacy, and context in several ways. First, we found evidence of cross-level interactions between the context of the team and individual dispositions. In particular, collective efficacy moderated the relationship between CSE and performance management behavior, such that CSE more strongly influenced performance management behavior when collective efficacy was low. In addition, collective efficacy moderated the relationship between agreeableness and interpersonal teamwork behavior, such that agreeableness more strongly influenced interpersonal behavior when collective efficacy was high. Taken together, these findings have particularly significant theoretical implications because they suggest that a group level phenomenon, collective efficacy, crosses levels to influence the relationship between two individual-level phenomena, personality and teamwork behavior. Stated differently, they suggest that group confidence may play a role in eliciting or suppressing the behavioral manifestation of individual personality characteristics.

Second, the results of this study are in line with a trait-based interactionist perspective (Tett & Burnett, 2003) and the premise that the social and task demands of teamwork evoke trait-expressive behavior originating from different personality constructs. Collective efficacy provides cues that arise from its motivational and atmospheric properties, and these cues affect trait to behavior relationships differently depending on the traits and behaviors being considered. Thus, our study establishes that a team-level emergent state, collective efficacy, influences the relations between individual traits and behaviors in teams. Further research is needed to enhance our understanding of how and why this occurs. In particular, future studies should examine what individual motives, needs, and self-regulatory processes underlie trait expression in teams and how team context in other forms influences these motives, needs, and self-regulatory processes. A novel contribution of our study is our finding that collective efficacy may in some cases strengthen, and in other cases dampen, the influence of different personality traits. This finding reinforces the need to examine cross-level moderators of the relationship.
between personality and work outcomes (Tett & Burnett, 2003) and the role of context and group level perceptions in both facilitating and suppressing the effects of personality on various work behaviors.

Third, the study extends research on CSE by examining it in a team environment. We found that individuals with a more favorable view of themselves and more confidence in their capabilities exhibit behaviors that contribute to effective team functioning. These findings build on prior studies demonstrating that CSE is significantly associated with individual goal-setting and task performance (Erez & Judge, 2001) and individuals with a positive self-concept are more inclined to act promptly on feedback from others to improve their performance (Bandura & Cervone, 1983; Brockner, 1988). Given the motivational and self-regulatory component of the CSE construct (e.g., Johnson et al., 2008), it may be important in determining whether an individual possesses the confidence and ability to effectively contribute performance management behavior in a team context.

In their recent review of CSE, Johnson et al. (2008) emphasize that measuring and treating CSE as an aggregate construct using separate subtrait scales will help to clarify the specific mechanisms by which CSE relates to different phenomena. Therefore, although we examined CSE using a well-established, global measure of CSE (i.e., the CSES; Judge et al., 2003), we encourage the use of separate measures of the CSE subtraits in future research. Such research will be valuable in ascertaining whether processes unique to each subtrait may also explain the relations we observed in the present study. More generally, we encourage continued investigation of the nomological network of CSE and the influence of CSE on team member behavior and team performance.

Fourth, our results demonstrate that personality traits can be viewed as linking mechanisms that relate to team performance via teamwork behaviors. From this multilevel perspective, personality traits influence individual-level behaviors that contribute in an additive fashion to team outcomes. Our findings also indicate, however, that collective efficacy moderates the influence of certain personality traits on these individual-level behaviors. Thus, our study makes a contribution toward building a stronger theoretical understanding of the process mechanisms linking personality to team performance and also the circumstances in which personality traits will predict the individual behaviors that contribute to high levels of team performance.

While our results support the conclusion that collective efficacy plays a top-down role in shaping individual teamwork behavior, it should be noted that there are other variables likely to shape individual teamwork behavior via similar mechanisms. For example, factors such as reward structures and perceived managerial support might also affect relationships between personality traits and teamwork behavior. Research on higher level variables such as these would be consistent with arguments of those who advocate the importance of studying the joint effects of personality and contextual variables on behavior (Epstein, 1983; Lewin, 1935; Mischel, 1977). More broadly, we concur with scholars who suggest that team research would benefit from greater attention to contextual factors (e.g., Mathieu, Maynard, Taylor, Gilson, & Ruddy, 2007). Classic notions of context refer to “stimuli and phenomenon that surround and thus exist in the environment external to the individual” (Mowday & Sutton, 1993; p. 198). Johns (2006) recently noted that context has “many faces” and can manifest in numerous ways. Examples he lists of how context operates include, but are not limited to, the salience of situational features, changes in situational strength, cross-level effects, and as a shaper of the way organizational members interpret the meaning of their immediate environment. Each of these examples can manifest in teams, and we encourage team scholars to further examine contextual influences on team processes and outcomes.

It should also be noted that collective efficacy was measured only once, after the second round of feedback from the simulation. Thus, a limitation of our results is that we cannot assess reciprocal relationships between collective efficacy and performance, or between collective efficacy and teamwork behavior. Prior research has shown that individuals (Silver, Mitchell, & Gist, 1995) and teams (Feltz & Lirgg, 1998) respond to positive performance feedback differently than negative
performance feedback. Specifically, positive feedback tends to raise efficacy beliefs while negative feedback tends to lower efficacy beliefs only after repeated episodes of negative feedback. Once formed, efficacy beliefs tend to show resiliency in the face of negative information (Bandura, 1997). Although the timing of our measures permits us to say that early perceptions of collective efficacy are associated with subsequent behavior and performance, we cannot rule out reciprocal relationships that might occur among these variables. Likewise, we cannot rule out the possibility that performance feedback subsequent to the assessment of collective efficacy might have impacted ratings of teamwork behavior.

Another limitation relates to the use of individual ratings of collective efficacy, which were subsequently aggregated. Although this is the most frequently used method to assess collective efficacy (Stajkovic et al., 2009), its validity hinges on the extent to which team members’ perceptions are shared. In this study, statistical tests support the conclusion that team member perceptions were stronger within teams than between teams. Nevertheless, we also suggest that additional research is warranted to examine whether other forms of collective efficacy measurement, such as having group members discuss their efficacy perceptions and arrive at a single assessment, produce similar results.

The results of this study suggest a number of applied implications related to the formation and management of teams. First, our results linking individual and team-level predictors to teamwork behavior and team performance suggest that teams would be wise to aim to actively develop good teamwork behavior rather than focus solely on group outcome issues (improved efficiency or reducing error rates). Second, our finding that conscientiousness, CSE, and agreeableness predicted dimensions of teamwork behavior provides support for using these personality measures to select individuals into teams (e.g., Morgeson, Reider, & Campion, 2005). While these relationships are likely to hold in many circumstances, caution is warranted due to the top-down influence of collective efficacy. Teams can expect that conscientious members will be task-focused regardless of how confident the team is. On the other hand, the benefits of selecting individuals high in CSE and agreeableness appears to be contingent on collective efficacy levels. A highly agreeable individual will be more likely to contribute to the interpersonal dynamics of a high efficacy team than a low efficacy team. Our slopes analysis revealed, however, a modest negative association between agreeableness and interpersonal teamwork behavior at low levels of collective efficacy. Thus, teams that have suffered performance setbacks can expect to see greater degrees of performance management behavior from members with high levels of core-self evaluation and conscientiousness. They should not expect to see higher levels of interpersonal behavior from members who are more agreeable.

Finally, the observed effect of early perceptions of collective efficacy on both dimensions of individual teamwork behavior also highlights the need to recognize that team member perceptions of collective capability play a pivotal role in determining an individual’s contribution to the team. Confidence perceptions that emerge shortly after team formation appear to influence subsequent individual behavior. Therefore, efforts should be taken to manage these perceptions at an early stage. Factors that have been argued to influence collective efficacy perceptions include verbal persuasion by a leader or influential team member (Bandura, 1997; Lester et al., 2002), process interventions aimed at increasing cooperation (Gibson & Earley, 2007), and positive feedback on initial performance (Tasa et al., 2007). Early efforts that target each of these factors should, according to the results of this study, have positive long-term implications for the team.

In conclusion, the purpose of this research was to examine individual- and team-level antecedents of individual teamwork behaviors and team performance. At the individual level, agreeableness positively predicted interpersonal team behaviors and conscientiousness and core-self evaluation positively predicted performance management teamwork behaviors. At the team level, collective efficacy positively predicted both dimensions of teamwork behavior and moderated the relationships involving agreeableness and CSE. Accordingly, this study demonstrates that the likelihood of individuals
engaging in teamwork behavior is independently and jointly influenced by both individual differences in personality and team-level collective efficacy.

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