Can We Get Some Cooperation Around Here? The Mediating Role of Group Norms on the Relationship Between Team Personality and Individual Helping Behaviors

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Drawing on the group-norms theory of organizational citizenship behaviors and person–environment fit theory, we introduce and test a multilevel model of the effects of additive and dispersion composition models of team members’ personality characteristics on group norms and individual helping behaviors. Our model was tested using regression and random coefficients modeling on 102 research and development teams. Results indicated that high mean levels of extraversion are positively related to individual helping behaviors through the mediating effect of cooperative group norms. Further, low variance on agreeableness (supplementary fit) and high variance on extraversion (complementary fit) promote the enactment of individual helping behaviors, but only the effects of extraversion were mediated by cooperative group norms. Implications of these findings for theories of helping behaviors in teams are discussed.

Keywords: helping behaviors, personality, teams, fit

Due to the rise of the global economy and subsequent shift to a knowledge-based economy, organizations have increasingly turned to team-based structures to accomplish work tasks. Work teams are typically defined as an interdependent group of two or more people who are tasked with contributing to the parent organization’s performance (Salas, Dickinson, Converse, & Tannenbaum, 1992). To accompany the increased use of team-based structures, organizational scholars have broadened typical conceptualizations of job performance to include organizational citizenship behaviors (OCB) that are not typically subsumed under typ-ical task or overall job performance descriptions (e.g., Organ, Podsakoff, & Mackenzie, 2006). Among the range of behaviors that can be considered OCB are helping behaviors, defined as “members’ discretionary behaviors intended to benefit other work group members or the group as a whole” (Sparrowe, Soetjipto, & Kraimer, 2006, p. 1194). Such behaviors help build and strengthen interpersonal relationships. Examples of helping behaviors include assisting a coworker who is struggling or staying late to cover another’s shift. Given the highly interdependent nature of teams, these behaviors are essential to their viability and effectiveness (Burke, Stagle, Salas, Pierce, & Kendall, 2006; Driskell & Salas, 1992; N. P. Podsakoff, Whiting, Podsakoff, & Blume, 2009).

Because of the critical importance of helping behaviors in modern organizations, there is a need to identify employees who are likely to engage in helping at work. Thus, there has been a preponderance of research exploring the individual personality predictors associated with helping behaviors (e.g., Chiaburu, Oh, Berry, Li, & Gardner, 2011; Organ & Ryan, 1995). Despite these important findings, the literature to date has largely failed to consider the effect that team-level operationalizations of personality have on individual-level helping behaviors (for exceptions, see Porter et al., 2003; Raver, Ehrhart, & Chadwick, 2012). This is a surprising gap in the field because helping behaviors frequently occur in social settings (Organ, 1997) and are likely to be influenced by one’s proximal social context at work, namely, one’s team. Thus, research is needed to investigate how helping behaviors emerge in response to both the composition of the personality traits that exist among a team’s members and the norms that develop in teams. Such research would advance the understanding of how personality in teams can impact helping behaviors and
allow insight into how to foster these beneficial behaviors in modern organizations (Driskell, Hogan, & Salas, 1987). In examining how team-level personality composition influences individual-level helping behaviors, we focused on the mediating role of norms as a means of informal control in teams and on the extent to which norms are predicted by the composition of team members’ personality characteristics.

Our research makes three primary contributions. First, we contribute to the OCB literature by extending Ehrhart and Naumann’s (2004) group norms theory of OCB to test the influence of group-level personality and group norms on individual-level helping behaviors. According to Ehrhart and Naumann (2004), group norms that encourage helping develop through either descriptive means (i.e., watching other members behave in a certain way; Cialdini, Kallgren, & Reno, 1991) or injunctive means (i.e., concerning behaviors that lead to social approval; Deutsch & Gerard, 1955). Group-level norms lead to individual-level helping because the adoption of group norms that stipulate helping behaviors sends clear social information cues to individuals regarding acceptable behavior in the group (Salancik & Pfeffer, 1978). Further, norms serve as an informal means of social control (Cialdini & Trost, 1998) that can help a team to succeed in a flatter, team-based work context that requires frequent interpersonal interaction (George & Jones, 1997; Organ, 1997). Therefore, studying both how to stimulate the emergence of norms and how they affect behaviors provides insight of great import to practitioners in team-based organizations as well as to researchers studying teams. As such, the current study aimed to address these gaps in the extant literature.

Second, we contribute to research on personality in teams by investigating the effects of two personality traits viewed as particularly relevant for interpersonal interactions, agreeableness and extraversion (Barrick, Stewart, Neubert, & Mount, 1998). Specifically, we examine how different compositional models—which represent the mean and dispersion (represented by the variance) models (Chan, 1998)—of these traits predict individual-level helping behaviors through their effects on cooperative group norms (Chatman & Flynn, 2001). This is an important contribution because recent work has shown that variance on personality traits in teams may be equally important as the mean levels of traits in predicting team outcomes (Bell, 2007). However, variance in individual-difference characteristics within a team has been shown to have both positive and negative effects on individual- and team-level outcomes, depending on the trait under consideration (e.g., Barrick et al., 1998; Bell, 2007). Given these equivocal results, our study informs research and practice with a more fine-grained analysis focused on a limited number of personality traits (i.e., agreeableness and extraversion) that are theoretically connected to a mediating team process (i.e., group norms). In this way, we offer both conceptual and empirical contributions to the literature on personality in teams. Further, most research on the antecedents of group norms has focused on surface-level diversity characteristics (e.g., demographics; Chatman & Flynn, 2001) and has largely neglected the role of deep-level characteristics that have implications for effective group functioning (Bell, 2007).

Third, we support our hypothesized model by drawing from the supplementary and complementary fit (DeRue & Hollenbeck, 2007; Kristof, 1996) literature to derive our hypotheses for the effects of personality composition on individual outcomes. In this regard, we inform the fit literature by showing how actual internal team fit (i.e., not perceptions of fit; Humphrey, Hollenbeck, Meyer, & Ilgen, 2007) on personality characteristics influences individual-level outcomes. With this final contribution, we sought to expand prior knowledge of the effects of person-team fit by showing how the variance of team characteristics can explain individual-level outcomes beyond the explanatory power afforded by the mean levels of traits. Our hypothesized multilevel model is presented in Figure 1.

**Theoretical Background and Hypotheses**

**Cooperative Group Norms and Helping Behaviors**

Group norms are the informal, socially shared standards against which the appropriateness of behaviors in groups is evaluated (Birenbaum & Sagarin, 1976; Cialdini & Trost, 1998). They are an informal control structure that arises in teams to promote appropriate behaviors and sanction inappropriate behaviors (Stewart, Courtright, & Barrick, 2012). In the current study, we investigated the role of cooperative group norms in motivating helping in teams, which reflect the “degree of importance people place on their shared pursuits, shared objectives, mutual interests, and commonalities among members” (Chatman & Flynn, 2001, p. 956). Groups with norms that endorse cooperation as opposed to competition are better suited to effectively tackle interdependent work tasks because cooperative norms stipulate the existence of mutual understanding and harmonious interpersonal relationships. Further, Chatman and Flynn (2001) contended that “because group-level goals are emphasized in cooperative teams, members are likely to develop shared views about ways to approach and accomplish their required tasks” (p. 960). These shared views enhance the ability of team members to coordinate their efforts. In addition to the positive outcomes that can emerge from the existence of group norms (e.g., the interpersonal, relationship-based benefits of cooperative norms), there are harmful consequences that can result from the absence of group norms within teams. Specifically, teams without these group norms are unlikely to adopt effective task strategies as is evident from empirical work indicating that teams adopting cooperative group norms enjoy higher team performance and satisfaction (Chatman & Flynn, 2001).

![Figure 1. Hypothesized multilevel mediation model.](image-url)
According to Ehrhart and Naumann (2004), cooperative group norms also influence individual-level helping behaviors for several reasons. First, norms provide individuals with the “social proof” heuristic (Cialdini & Trost, 1998) by giving them a mental schema of appropriate behaviors in which to engage. When an individual is faced with making a decision as to whether to provide help to a team member, he or she relies on his or her schema of what constitutes appropriate behavior in the group. If that team member behaves in a way that is consistent with the schema, he or she is met with greater social approval. In a group with higher levels of cooperative group norms, a shared understanding exists that team members will help one another accomplish work tasks (Cannon-Bowers, Tannenbaum, Salas, & Volpe, 1995). Therefore, individuals are likely to help team members when the norm of the group dictates that the behavior is appropriate.

In addition to providing a schema of appropriate behaviors, norms also dictate the existence of social rewards associated with conforming to the group norms and the social punishments associated with rejecting the group norms (Ehrhart & Naumann, 2004). Teams with cooperative norms reward individual behaviors that reflect the norm (i.e., helping others) and punish those that are inconsistent with the norm (i.e., competitive behaviors). These social rewards and punishments then motivate individuals to behave in ways that are consistent with the group’s norms. Extant research has supported Ehrhart and Naumann’s (2004) model, showing that work-unit helping norms influence individual-level helping behaviors (Naumann, 2010; Naumann & Ehrhart, 2011) and that cooperative group norms can increase unit-level amounts of OCBs in military settings (Ehrhart, Bliese, & Thomas, 2006) and safety behaviors in work units (Fugas, Melia, & Silva, 2011). As Ehrhart and Naumann (2004) stated, “once OCB is prescribed by the group, the level of OCB performed by individual group members should subsequently increase” (p. 969).

**Hypothesis 1:** Cooperative group norms will be positively related to individual-level helping behaviors.

**Mean Agreeableness and Extraversion and Helping Behaviors**

In this study, we considered the role of two traits that are critical to interpersonal interactions and behavior in team settings: agreeableness and extraversion (Barrick, Stewart, & Piotrowski, 2002; Driskell, Goodwin, Salas, & O’Shea, 2006). Agreeableness is defined as the extent to which one is courteous, trusting, compliant, and altruistic (Costa & McCrae, 1992). Individuals high on agreeableness perform well in jobs requiring a high degree of interpersonal interactions (Barrick & Mount, 1991). As described by Costa and McCrae (1992), highly agreeable individuals are “sympathetic to others and eager to help them and believe that others will be helpful in return” (p. 15). Barrick et al. (1998) succinctly stated that “the very essence of agreeableness is cooperation” (p. 381). The second characteristic we examine is extraversion. Extraverts are gregarious, sociable, energetic, and optimistic (Costa & McCrae, 1992). Extraverts are also predisposed to experience positive emotional states, especially in the company of others (Lucas, Diener, Grob, Suh, & Shao, 2000; Watson & Clark, 1984).

According to socioanalytic theory, agreeable individuals are motivated by communion striving and extraverts are motivated by status striving (Barrick, Mount, & Li, 2013; Hogan, 1996; Wiggins & Trapnell, 1996), both of which are broad goals associated with social interactions (Bakan, 1966). Given the sociable characteristics of individuals who are agreeable and extraverted, it is clear why teams characterized by high mean levels of agreeableness and extraversion generally have a high degree of social cohesion, distribute work evenly, rarely suffer from conflict (Barrick et al., 1998), and typically outperform teams with less agreeable and less extraverted members (Bell, 2007).

Because individual helping behaviors frequently occur as a function of individuals’ social context (Organ, 1997; Porter et al., 2003), we posited that mean team agreeableness and extraversion would be positively related to an increase in individuals’ use of these behaviors. Further, we expected that cooperative group norms would mediate the relationship of team-level means of agreeableness and extraversion with helping. Teams with a high mean level of agreeableness have a number of individuals with a propensity to strive for communal relationships with one another, promoting altruistic and cooperative behavior in the workplace (Barrick et al., 1998; Clark & Mills, 1993). These individuals’ patterns of interaction with their fellow team members are expected to communicate a norm of cooperation to the rest of the team through their personal norms (Ehrhart & Naumann, 2004). A personal norm is defined as a belief an individual has with respect to appropriate behaviors in situations (Allen & Meyer, 1990). For example, an individual who offers to help a colleague complete his or her work communicates a personal norm of cooperation to other group members. In a team with a high number of agreeable individuals, other team members endorse and share this personal norm either by communicating their approval or by making similar offers. Subsequently, such personal norms become ingrained within the team, serving as team norms that affect subsequent individual behaviors (Ehrhart & Naumann, 2004). In sum, we expected that in teams with high average levels of agreeableness, the social pressure on individuals to engage in cooperative behaviors increases because helping is more strongly encouraged by the emergence of cooperative group norms.

Cooperative norms are also likely to emerge in groups composed of extraverted individuals. Scholars have theorized that group norms develop through communication within groups (Feldman, 1984), and teams with a high mean level of extraversion are composed of individuals who are energetic, talkative, assertive, and ambitious and who enjoy social interactions (Barrick & Mount, 1991; Barrick et al., 1998). Thus, groups with extraverted members are more likely to communicate when they require aid from team members (Porter et al., 2003) because individuals high on extraversion on a team are likely to “communicate easily and freely without fear of intimidation by their peers” (Barry & Stewart, 1997, p. 66). This means that groups with high levels of extraversion are more likely to emerge in teams with high mean levels of agreeableness.
extraversion are more likely to enjoy open communication resulting in the emergence of norms mandating communication and cooperation. Moreover, team members higher in extraversion should be more likely to persuade and influence their team members to adopt norms of cooperation. This is because extraverts can be dominant and assertive (Barry & Stewart, 1997), and they are likely to influence the emergence of norms of cooperation via injunctive norms. Injunctive norms develop as a result of individuals conforming to normative influence in order to simultaneously obtain social rewards and avoid social punishments (Cialdini & Trost, 1998; Ehrhart & Naumann, 2004). As a result of their assertive and dominant nature, extraverts are more likely than introverts to both punish inappropriate behavior and reward positive behavior. As such, a team with a high mean extraversion not only has stronger cooperative norms but also stipulates that individuals engage in helping behaviors.

Hypothesis 2: Team-mean-level (a) agreeableness and (b) extraversion will be positively related to individual-level helping behaviors.

Hypothesis 3: The relationship of team-mean-level (a) agreeableness and (b) extraversion with individual-level helping behaviors will be mediated by cooperative group norms.

Beyond the Mean: Agreeableness and Extraversion Dispersion and Helping Behaviors

Examination of a team’s mean levels of personality traits (additive models) provides important insight into a team’s composition. Yet, such a conceptualization does not provide a comprehensive view of the team, and teams scholars have suggested that a team’s variance on traits (represented by dispersion models) is relevant to understanding team processes and outcomes (Bell, 2007; Kozlowski & Klein, 2000). Thus, such conceptualizations should be considered to more fully capture the dynamics of team personality. For example, although the dominant and assertive nature of extraverts may be generally related to the emergence of cooperative norms via injunctive means and subsequent helping behaviors, too many such individuals could hamper norm emergence without the company of individuals who are less dominant and assertive. We therefore posited that a team’s variance on extraversion and agreeableness are also relevant to the emergence of cooperative group norms and individual helping behaviors (Bell, 2007; Bowers, Pharmer, & Salas, 2000).

Our arguments with respect to these relationships draw from the person–environment (PE) fit literature. According to Kristof-Brown, Zimmerman, and Johnson (2005), PE fit is defined as “the compatibility between an individual and a work environment that occurs when their characteristics are well matched” (p. 281). Because many different facets of an individual’s work environment may be important to fit, scholars have operationalized fit with respect to various different targets, such as person–job, person–team, person–supervisor, and person–organization (Kristof, 1996). The target most applicable to the current study is person–team fit. In our study, we are interested in the group-level congruence or compatibility between individuals’ traits that make up the team as opposed to individuals’ perceptions as to whether they fit with the rest of the team. Such a conceptualization of group-level fit has been referred to as the team’s internal fit (DeRue & Hollenbeck, 2007). According to the person–team fit literature, the fit of one’s personal attributes relevant to the attributes of the other individuals on one’s team predicts important behavioral and attitudinal outcomes, such as performance and job satisfaction (Kristof-Brown, Zimmerman, & Johnson, 2005).

There are two theoretical approaches that explain the positive outcomes of fit: supplementary and complementary fit. Supplementary fit in teams occurs when an individual possesses characteristics that are similar to those of other individuals on the team and therefore supplements the extant characteristics in the team environment. Teams with a high degree of supplementary fit should have team members who like one another, as their values and goals are similar (Cable & Edwards, 2004). Supplementary fit is important to team effectiveness because teams with higher levels of supplementary fit can more effectively establish coordination among team members due to their shared values, assumptions, and expectations about their group and the members of their group (Kristof-Brown, Barrick, & Stevens, 2005).

In contrast, team complementary fit occurs when individuals possess unique characteristics that do not already exist within the team; as such, these characteristics serve to afford the team new information, skills, or abilities that increase the team’s collective capabilities (Kristof, 1996). Complementary fit is important to team effectiveness because teams missing an individual who possesses a critical set of skills or traits suffer poor performance; thus, upon having this need met, a team improves its performance. We argue that teams with members who are more similar on agreeableness (i.e., low variance) enjoy high levels of supplementary fit, which cause them to develop cooperative group norms and, in turn, cause individuals to engage in helping behaviors. Conversely, teams with members who are more dissimilar on extraversion (i.e., high variance) enjoy high levels of complementary fit, resulting in the development of cooperative group norms and the individual helping behaviors that result from such norms.

With respect to agreeableness, teams composed of individuals with minimal variance on this trait are expected to develop cooperative norms that lead to helping behaviors within the group. This is because agreeableness influences individuals’ preferred manner for interacting with others (Barrick & Mount, 1991). In particular, teams with supplementary fit on agreeableness are composed of individuals with similar predispositions as to how they should interact with one another. Similarity in work values allows individuals to better anticipate the behaviors of other group members, which provides individuals with a greater sense of control over their work environment and stimulates the development of cooperative norms. Further, according to Ehrhart and Naumann (2004), “the perception of similarity between oneself and other work group members evokes the perception of a common set of interests” (p. 965), which, in turn, is expected to cause the emergence of cooperative norms and the enactment of helping behaviors.

Conversely, a team with high variance on agreeableness (i.e., composed of individuals both high and low on agreeableness) are composed of members with different perceptions of how to engage in interpersonal interactions and cooperative group work. Based on the logic of supplementary fit, these differences on characteristics associated with the development of group norms hamper the emergence of cooperative group norms. Highly agreeable individuals harbor personal norms of respect and pleasantness in
interpersonal interactions, while disagreeable individuals do not. Differences in perceptions of what constitutes appropriate interpersonal interactions cause the highly agreeable individuals to feel disrespected, dissatisfied, and frustrated by the disagreeable individuals’ interpersonal mannerisms, while the disagreeable individuals on the team also feel frustrated by their inability to understand the more agreeable individuals’ need for harmony and affiliation. Therefore, cooperative norms are unlikely to form since conflict develops over the ways in which team members should work together.

Empirical evidence in the literature on shared values and perceptions supports this logic. For example, Jehn and Mannix (2001) found that group members with similar work values (regardless of what their values actually were) are likely to agree on work norms, which in turn enhance the team’s harmony. Klein, Knight, Ziegert, Lim, and Saltz (2011) found similar results: namely, that teams with similar values (regardless of the actual mean level of the values) enjoyed less conflict and, as a result, greater team effectiveness. In sum, supplementary fit on individuals’ work values, particularly those related to interpersonal interaction styles, promotes the emergence of cooperative norms and stimulates individuals’ engagement in helping behaviors.

In contrast to our hypotheses regarding agreeableness, we argue that high variance on extraversion in a complementary fit fashion engenders cooperative norms and in turn influences individuals to engage in more helping behaviors. As other scholars have argued (e.g., Barrick et al., 1998; Humphrey et al., 2007), effective group functioning requires both leaders and followers. Because of extraverts’ dominance, sociability, and desire to influence others (Hogan & Holland, 2003), meta-analytic research has revealed a substantial relationship between extraversion and leadership emergence and effectiveness (Judge, Bono, Ilies, & Gerhardt, 2002). Conversely, introverts’ inherent tendencies align with being more reserved, passive followers (Costa & McCrae, 1992; Grant, Gino, & Hofmann, 2011; Judge et al., 2002). While extraverts are motivated to display their energy and ambition and are likely to voice their desired approach to team functioning, introverts tend to “avoid excessive sensory input” (Phillips & Bedeian, 1994, p. 91) and instead bring vital resources to the team through the thoughtfulness and deliberation that result from their inwardly directed energy. As such, extraverts may be more motivated to assume leadership roles, while introverts are less motivated to seek out leadership roles (Barrick et al., 2013).

Given the differences in motives between introverts and extraverts, a complementary fit approach to staffing a team with both introverts and extraverts causes the team to enjoy high levels of cohesiveness and a lack conflict because there are individual seeking both leader and follower roles (Barrick et al., 1998). This is consistent with arguments made by Kristof-Brown, Barrick, and Stevens (2005) that team complementary fit results in higher cohesion. Ehrhart and Naumann (2004) argued that a higher degree of work-group cohesiveness makes it more likely that cooperative norms emerge because cohesiveness relates to the frequency of interaction and agreement between members (Shaw, 1981) as well as member identification with the group (Janis & Mann, 1977). When members identify strongly with the group, they are more likely to suppress their self-interest and adopt cooperative norms that place the group’s interests above their own, increasing their frequency of exhibiting helping behaviors (Ehrhart & Naumann, 2004). In addition, a team with high extraversion variance includes both high-extraversion individuals, who tend to be more dominant and assertive, and low-extraversion individuals, who tend to be less dominant and less interested in influencing others. The high-extraversion individuals have stronger motivational tendencies to influence others and establish injunctive norms, whereby appropriate behaviors are met with social rewards and inappropriate behaviors are met with social punishments. The extraverted individuals on the team are met with a complementary group of introverts who are more likely to let others take the lead in terms of developing and enforcing these norms. This logic is supported by Grant et al. (2011), who drew from dominance complementarity theory (Carson, 1969; Kiesler, 1983) to argue that “high-quality interactions are facilitated when dominance and assertiveness from one party are balanced by compliance, obedience, and submissiveness from the other party” (p. 529).

Conversely, a team with low variance on extraversion risks dysfunction. For example, a team may have too many members who are not as interested in social interactions and not enough members who exhibit the outwardly verbal and sociable characteristics of extraverts, providing little opportunity for shared group norms to emerge (Barry & Stewart, 1997). Such characteristics are important for communication and the establishment of norms regarding cooperative behavior, because in highly interdependent teams, effective person-based leadership behaviors strongly influence effective team functioning (Burke et al., 2006). At the other end of the spectrum, a team with low variance on extraversion may also experience conflict resulting from too many highly extraverted individuals competitively asserting dominance and attempting to take on leadership roles. Both of these situations would be expected to hamper the emergence of cooperative group norms, which would in turn discourage individuals from choosing to engage in helping behaviors. In sum, we expected to find that high extraversion variance represents a form of complementary fit that encourages the development and reinforcement of cooperative norms, all of which encourage individuals to engage in more helping behaviors.

**Hypothesis 4:** Team variance on (a) agreeableness will be negatively and team variance on (b) extraversion will be positively related to individual-level helping behaviors.

**Hypothesis 5:** The relationship of team variance on (a) agreeableness and (b) extraversion with individual-level helping behaviors will be mediated by cooperative group norms.

**Method**

**Sample and Procedures**

Data were collected in 2009 from team members and their team leaders in a large, private-sector manufacturing firm operating in the defense industry in South Korea. Teams in the sample were...
characterized by a high degree of interdependence, and helping was critical to successful team performance. All questionnaires were written in English and translated to Korean in accordance with established cross-cultural translation procedures (Brislin, 1980). As part of a larger data collection effort, 3 team members responded to the personality composition, helping and cooperative group norms questionnaire, while team leaders were asked to provide ratings of helping behaviors for individuals on the team. Surveys were distributed to 1,500 team members, of which 1,061 responded to the survey (70.1%) and provided full data. In total, members of 102 work teams participated, as well as 102 external team leaders. All of the within-team response rates were over 75%. The mean size of the teams was 10.6 members per team ($SD = 8.4$). The mean age of the team members was 34 years ($SD = 3.39$). Eighty-nine percent of the respondents were males.

**Measures**

All scales were rated on a 7-point Likert scale with anchors ranging from *strongly disagree* to *strongly agree*. In responding to the personality items, team members were given explicit instructions to answer the questions in relation to themselves (i.e., “Please answer the following questions about yourself”). In responding to the group norms items, team members were given explicit instructions to answer the questions in relation to their team (i.e., “Please answer the following questions about the work you do on your team”). The reliabilities for the team-level variables were computed using a nested alpha procedure, whereby we computed the team mean of each item and then calculated coefficient alpha at the team level (Chen, Mathieu, & Bliese, 2004).

**Personality.** For each personality trait, team members responded to a shortened six-item adaptation of Costa & McCrae’s (1992) NEO Five-Factor Inventory (NEO–FFI) measures. We shortened the scale by asking individuals to rate their personality using the six different facets for extraversion (warmth, gregariousness, assertiveness, activity, excitement-seeking, and positive emotionality) and agreeableness (trustfulness, modesty, compliance, altruism, straightforwardness, and tender-mindedness). We created one item per facet. For example, items for extraversion included “I am a warm and friendly person” and “I am a very active person” ($\alpha = .79$). Items for agreeableness included “I am altruistic” and “I am straightforward” ($\alpha = .88$). We tested the factor structure of our agreeableness and extraversion scales with confirmatory factor analyses, comparing a two-factor model to a one-factor model. The results indicated that a model with the items for extraversion and agreeableness loading on different latent factors provided an acceptable fit to the data—$\chi^2(53) = 159$, comparative fit index (CFI) = .91, standardized root-mean-square residual (SRMR) = .09—and that a model with these items all loading on a single factor provided a poorer fit—$\chi^2(54) = 207$, CFI = .87; SRMR = .10. Further, all the loadings of the items on their respective factors were .40 or above. We operationalized team-level mean extraversion and agreeableness as the mean of each team’s respective team members’ extraversion and agreeableness. We operationalized the team-level variance as the standard deviation of extraversion and agreeableness across individuals within each team. Because both additive and dispersion models were hypothesized for personality composition, agreement within teams for personality was neither expected nor tested (Chan, 1998; Kozlowski & Klein, 2000).

**Cooperative group norms.** Team members rated the degree of cooperative group norms in their teams via five items from Chatman and Flynn (2001). Sample items are “People are willing to sacrifice their self-interest for the benefit of the team” and “It is important for us to maintain harmony within the team.” We obtained a coefficient alpha of .95 for the scale ratings. Because individual respondents were nested within groups, we computed the intraclass correlation, or ICC(1), which is an index of within-group variability compared to between-group variability, and ICC(2), which represents the reliability of group means and the reliability of differentiation among groups (Bliese, 2000). The aggregation statistics for cooperative group norms—ICC(1) = .13; ICC(2) = .60—were in the normal and acceptable range suggested by Bliese (2000), indicating that there is meaningful variance at the group level and that differences among groups can be reliably measured. We also calculated the average $r_{bg}$ to be .82, which indicates a high level of agreement among group members (LeBreton, James, & Lindell, 2005).

**Individual helping behaviors.** Supervisors rated individual helping behaviors using Williams and Anderson’s (1991) seven-item Organizational Citizenship Behavior—Individuals scale. We collected these ratings from supervisors because supervisors interacted frequently with team members and were closely involved in day-to-day activities within the teams. Therefore, we believed that supervisors were an appropriate rater of these behaviors. Sample items are “Takes time to listen to coworkers’ problems and worries” and “Helps others who have heavy workloads.” We obtained a coefficient alpha of .92 for the scale ratings.

**Controls.** We controlled for the effects of team tenure, team size, and individual-level extraversion and agreeableness. Team tenure could be related to individuals’ propensity for helping, such that those with longer tenure on the team have gained the necessary knowledge to complete their work tasks and may have extra resources to devote to other team members. In the case of team size, a larger team may require more cooperation and coordination to function properly, thus making individual helping behaviors akin to core task requirements as opposed to extra-role behaviors. We controlled for the individual-level traits because our focus was on team-level effects on individual helping behaviors, and therefore, we sought to estimate the effects of the team personality composition beyond the effects of individual personality.

**Results**

Table 1 presents the study correlations and descriptive statistics. As expected, team-level mean extraversion ($r = .45$) and agreeableness ($r = .38$), as well as team-level variance on extraversion ($r = .28$), were positively related to cooperative group norms. As expected, team-level variance on agreeableness was negatively related to cooperative group norms ($r = -.12$).

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3 Research based on this sample was also reported in Kristof-Brown, Seong, and DeGeest (in press), Seong and Kristof-Brown (2012), and Seong, Kristof-Brown, Park, Hong, and Shin (in press). None of the focal variables from the current study overlap with the focal variables in those studies.
To test our hypotheses, we first used linear regression to estimate the first stage of our model (i.e., the paths from team-level personality to cooperative norms). Second, we used hierarchical linear modeling (HLM; Raudenbush, Bryk, & Congdon, 2004) to estimate the hypothesized cross-level effects. HLM utilizes random coefficient modeling to estimate the effect of higher level variables (e.g., the team personality and norms) on lower level variables (e.g., individual helping behaviors). Third, we used the PRODCLIN program (MacKinnon, Fritz, Williams, & Lockwood, 2007) to estimate the multilevel indirect effects and their respective bias-corrected 95% confidence intervals (CI). We evaluated our mediational hypotheses by determining the size of the indirect effect and whether it was significantly different from zero.

As shown in Table 2, both team-level mean extraversion ($\beta = .37$) and agreeableness ($\beta = .13$) were positively related to cooperative group norms, although the effect size of agreeableness was not statistically significant. The same was true of team-level extraversion variance ($\beta = .33$) and agreeableness variance ($\beta = -.11$). The team-level personality variance terms as a group provided an incremental $R^2$ of .11 over the model with just the team-level means.

The HLM results are shown in Table 3. First, we determined that 31% of the variance in individual helping behaviors resides between groups, justifying the use of multilevel modeling to determine the effect of team-level personality and norms on individual helping behaviors. Second, we estimated a model with individual helping behaviors regressed on the control variables, team-level personality mean, and the standard deviation of team-level personality. Third, we entered cooperative group norms as a predictor of individual helping behaviors to test our mediation hypotheses. We entered these parameter estimates as well as the regression results in the PRODCLIN (MacKinnon et al., 2007) program to generate cross-level indirect effect sizes and bias-corrected 95% CIs; these results are shown in Table 4.

Cooperative group norms ($\gamma_{05} = .29$) was a statistically significant predictor of individual level helping behaviors, providing support for Hypothesis 1. As shown in the first equation of Table 3, neither team-mean extraversion ($\gamma_{02} = .15$) nor agreeableness ($\gamma_{03} = .15$) was significantly related to individual helping behaviors. Therefore, Hypothesis 2 was not supported. Team-mean extraversion did have a significant indirect effect (.11; 95% CI [.03, .21]) on individual helping behaviors via cooperative group norms, but team-mean agreeableness did not. These results do not support Hypothesis 3a but do provide support for Hypothesis 3b.

### Table 1
**Descriptive Statistics and Correlations**

<table>
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<tr>
<th>Variable</th>
<th>$M$</th>
<th>$SD$</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Team tenure</td>
<td>3.9</td>
<td>4.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Extraversion</td>
<td>5.2</td>
<td>0.79</td>
<td>-0.04</td>
<td>(.80)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Agreeableness</td>
<td>5.4</td>
<td>0.75</td>
<td>-0.01</td>
<td>.59*</td>
<td>(.85)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Helping behaviors</td>
<td>5.4</td>
<td>0.78</td>
<td>-0.06</td>
<td>.14*</td>
<td>.05</td>
<td>(.92)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>$M$</th>
<th>$SD$</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Team size</td>
<td>10.6</td>
<td>8.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Extraversion (mean)</td>
<td>5.2</td>
<td>0.30</td>
<td>-0.09</td>
<td>(.79)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Agreeableness (mean)</td>
<td>5.4</td>
<td>0.33</td>
<td>.01</td>
<td>.63*</td>
<td>(.88)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Extraversion (SD)</td>
<td>0.74</td>
<td>0.23</td>
<td>.11</td>
<td>-0.10</td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Agreeableness (SD)</td>
<td>0.75</td>
<td>0.19</td>
<td>-0.23*</td>
<td>-0.07</td>
<td>-0.23*</td>
<td>.17*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Cooperative group norms</td>
<td>5.5</td>
<td>0.49</td>
<td>.03</td>
<td>.45*</td>
<td>.38</td>
<td>.28*</td>
<td>-.12</td>
<td>(.95)</td>
</tr>
</tbody>
</table>

*Note. Level 1 $N = 1,061$ individuals; Level 2 $N = 102$ teams. Individual-level descriptive statistics and intercorrelations are shown in the upper part of the table. Team-level descriptive statistics and intercorrelations are shown in the lower part of the table. Coefficient alpha reliability estimates are shown in the diagonal. $^* p < .05.$

### Table 2
**Regression Results for Cooperative Group Norms**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Equation 1</th>
<th>Equation 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team size</td>
<td>.06 (.09)</td>
<td>.02 (.09)</td>
</tr>
<tr>
<td>Extraversion (Mean)</td>
<td>.35* (.12)</td>
<td>.37* (.11)</td>
</tr>
<tr>
<td>Agreeableness (Mean)</td>
<td>.16 (.12)</td>
<td>.13 (.11)</td>
</tr>
<tr>
<td>Extraversion (SD)</td>
<td>.33* (.09)</td>
<td></td>
</tr>
<tr>
<td>Agreeableness (SD)</td>
<td>-1.11 (.09)</td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.47*</td>
<td>.56*</td>
</tr>
</tbody>
</table>

*Note. Level 1 $N = 1,061$ individuals; Level 2 $N = 102$ teams. All regression coefficients are standardized. Standard errors for the regression coefficients are presented in parentheses. $\Delta R^2$ refers to the incremental validity of the personality dispersion terms. Dash indicates data were not reported. $^* p < .05.$

### Table 3
**Hierarchical Linear Modeling Testing Effects of Personality and Cooperative Group Norms on Helping Behaviors**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Equation 1</th>
<th>Equation 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level-1 effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team tenure ($\gamma_{10}$)</td>
<td>-.04 (.04)</td>
<td>-.04 (.04)</td>
</tr>
<tr>
<td>Extraversion ($\gamma_{12}$)</td>
<td>.14* (.03)</td>
<td>.14* (.03)</td>
</tr>
<tr>
<td>Agreeableness ($\gamma_{13}$)</td>
<td>-0.09* (.03)</td>
<td>-0.09* (.04)</td>
</tr>
<tr>
<td>Level-2 effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team size ($\gamma_{20}$)</td>
<td>.03 (.06)</td>
<td>.02 (.05)</td>
</tr>
<tr>
<td>Extraversion (Mean)  ($\gamma_{22}$)</td>
<td>.15 (.11)</td>
<td>.05 (.11)</td>
</tr>
<tr>
<td>Agreeableness (Mean) ($\gamma_{23}$)</td>
<td>-0.05 (.12)</td>
<td>-0.10 (.11)</td>
</tr>
<tr>
<td>Extraversion (SD) ($\gamma_{24}$)</td>
<td>.14* (.08)</td>
<td>.06 (.08)</td>
</tr>
<tr>
<td>Agreeableness (SD) ($\gamma_{25}$)</td>
<td>-.19* (.08)</td>
<td>-.17* (.08)</td>
</tr>
<tr>
<td>Cooperative group norms ($\gamma_{26}$)</td>
<td>.29* (.09)</td>
<td></td>
</tr>
</tbody>
</table>

*Note. Level 1 $N = 1,061$ individuals; Level 2 $N = 102$ teams. All regression coefficients are standardized. Robust standard errors for the regression coefficients are presented in parentheses. $^* p < .05.$
Team variance on extraversion ($\gamma_{04} = .14$) and team variance on agreeableness ($\gamma_{05} = -.19$) were both statistically significant predictors of individual helping behaviors and in the expected direction. Therefore, Hypothesis 4 was supported. However, as shown in Table 4, only team variance on extraversion had a significant indirect effect on individual helping behaviors via cooperative group norms (.10; 95% CI: [.03, .19]). Therefore, Hypothesis 5a was not supported while Hypothesis 5b was supported.

### Discussion

The purpose of this study was to test hypotheses related to the relationship between the personality characteristics of a team, a team’s cooperative group norms, and team members’ individual helping behaviors. In conducting this study, we extended theory on the relationship between group norms and OCBS (Ehrhart & Naumann, 2004) by integrating extant theory with the framework of team-level fit, or the idea that congruence or incongruence among particular team characteristics can correlate with beneficial or deleterious outcomes for teams. Consistent with the literature on person–team fit (Kristof-Brown, Zimmerman, & Johnson, 2005), our results indicate that supplementary team fit on agreeableness and complementary team fit on extraversion correlate with higher levels of individual helping behaviors. Furthermore, in line with prior theorizing on cooperative group norms (Ehrhart & Naumann, 2004), higher levels of cooperative group norms correlate with increased levels of individual helping behaviors. Finally, cooperative group norms mediate the relationship between mean level and dispersion of team extraversion on individual-level helping behaviors. Although results for extraversion were generally as hypothesized, the results for agreeableness were inconsistent in supporting our hypotheses. These results have implications for the literature on helping behaviors, composition models of team-level personality, and person–team fit.

### Theoretical Implications

Our study makes three primary theoretical contributions. First, our findings extend prior research that has investigated personal and contextual antecedents of individual-level helping behavior; specifically, we identified the role of team-level personality antecedents (mean and variance of extraversion and agreeableness) as well as the role of cooperative group norms in eliciting individual-level helping behavior. Our research helps to elucidate the degree to which team members constitute a contextual or environmental attribute that can hinder or promote an individual’s helping behaviors. This type of research goes beyond traditional models of personality and citizenship to take into account the degree to which helping behaviors, a form of contextual performance, are at least partially dependent on both individual differences between people as well as individual differences among members of a team or work group. Specifically, we found that the mean and variance of team extraversion impact the adoption of cooperative group norms, which ultimately yields increased individual helping behavior; conversely, the variance of team agreeableness has direct effects only on helping behavior. The latter set of unexpected findings are interesting as agreeableness is characterized as a trait related to social harmony and striving for interpersonal acceptance, which should theoretically be related to the emergence of cooperative group norms. It could be that, in this sample, teams relied on the complementary balance of introverted and extraverted team members rather than on a supplementary, team-level tendency toward trust and cooperation in order to establish team norms. This is substantiated by the fact that the teams in this study were semi-autonomous research and development teams where extraverted individuals could have a substantial role in establishing injunctive norms (Ehrhart & Naumann, 2004) and where task conflict may not preclude cooperation and may even be helpful in stimulating creativity and effective team functioning (Farh, Lee, & Farh, 2010). However, it is important to note that variance on agreeableness still exerted significant effects on individual helping behavior. These effects may operate through a different mechanism, such as a team-level analog to communion striving articulated by socioanalytic theory (e.g., Barrick et al., 2002). Future research should explore this possibility.

Second, beyond extending the burgeoning literature on cooperative group norms (e.g., Chatman & Flynn, 2001; Ehrhart & Naumann, 2004; Raver et al., 2012), these results have important implications for the effects of personality on helping behaviors. Past research has revealed that an individual’s personality provides at least modest prediction of citizenship behaviors (Chiaoburu et al., 2011), and this study provides evidence that—in addition to an individual’s personality—team members’ personality composition creates a context that affects individuals’ propensity to engage in helping behaviors. Previous research on team-level personality composition has focused primarily on the effects of mean levels of traits on team performance, although research on deep-level diversity has noted that personality differences among team members can affect team processes and outcomes (e.g., Barrick et al., 1998; Bell, 2007). We have enriched this stream of research by demonstrating how alternate models of composition (e.g., mean and variance of traits) influence an outcome directly relevant to teams through the process of establishing group norms. In sum, these results suggest that conceptualizing the personality of members of a team in terms of the differences among team members advances understanding of team dynamics and individual behavior.

Finally, our findings have implications for research on person–team fit. This study extends research on team-level fit and differences among team members (Seong, Kristof-Brown, Park, Hong, & Shin, in press) by examining how deep-level diversity characterizes such as personality influence helping behavior. This study also extends research on person–team fit by suggesting that one mechanism through which supplementary and complementary fit

### Table 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>Indirect effect [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreeableness (Mean) → CGN → HB</td>
<td>.04 [-.02, .11]</td>
</tr>
<tr>
<td>Extraversion (Mean) → CGN → HB</td>
<td>.11 [.03, .21]</td>
</tr>
<tr>
<td>Agreeableness (SD) → CGN → HB</td>
<td>-.03 [-.09, .02]</td>
</tr>
<tr>
<td>Extraversion (SD) → CGN → HB</td>
<td>.10 [.03, .19]</td>
</tr>
</tbody>
</table>

Note. Level 1 N = 1,061 individuals; Level 2 N = 102 teams. Indirect effects are standardized. Bias-corrected confidence intervals were calculated using the PRODCLIN program. CI = confidence intervals; CGN = cooperative group norms; HB = helping behaviors.

$p < .05.$
can function is through the development of shared group norms regarding cooperation. For example, past research (e.g., Kristof-Brown & Jansen, 2007) has similarly suggested that objective fit on synchronicity (a time-based norm) can influence individual-level outcomes of stress and strain. The present study extends this branch of research by specifying a different form of fit and its effects on a different norm and outcome. In addition, this research informs and extends research on extraversion fit in teams by demonstrating its effects on team norms and behavioral outcomes. In sum, these results suggest that team-level models of fit should continue to focus on how team norms develop and influence behaviors related to team processes and functioning.

Practical Implications

For managers, developing unit-enhancing norms is a chief concern because such norms create conditions on teams in which individuals can cooperate effectively in order to ensure high group performance. Similarly, high levels of individual helping behaviors matter more than quality and quantity of the performance outcomes for work groups (Burke et al., 2006; Driskell & Salas, 1992; P. M. Podsakoff, Ahearne, & MacKenzie, 1997). Our findings imply that the composition of teams influences the degree to which individuals develop cooperative norms and perform helping behaviors. Thus, to encourage helping behaviors, team leaders should consider the personality makeup of the members of teams and form teams in such a way as to foster collaborative group norms and helping behaviors—namely, with high variance on extraversion and low variance on agreeableness. Furthermore, when assigning individuals to teams, managers should carefully consider the extraversion and agreeableness not only of an individual but the personality of the work group or team of that individual. Our results suggest that when it comes to extraversion and agreeableness, there is not necessarily one “right type” of individual personality profile that always increases team effectiveness.

Limitations and Future Directions for Research

Like all studies, this study is not without limitations. First, the cross-sectional nature of this data makes assessments of causality difficult to make. Personality differences among team members may encourage cooperative norms and, in turn, helping behaviors, but the receipt of these behaviors in turn may also shape perspectives of team norms. Erhhart & Naumann’s (2004) theory, upon which we based our theoretical framework, alluded to both possibilities. Therefore, future studies on the relationship between norms and behaviors should utilize a longitudinal design to permit the testing of reciprocal causal effects.

Second, participants in this study were from a sample of Korean research and development teams, which may impact the generalizability of these findings to work teams in other cultural contexts. For example, in collectivist cultures such as Korea, mean levels of traits such as agreeableness and extraversion may be valued differently than in individualistic cultures. Future researchers may seek to replicate these findings in a sample from an individualistic culture and test the effects of other traits (i.e., conscientiousness) that may be relevant to helping behaviors. It might also be the case that team personality interacts with task type, as is alluded to in Steiner’s (1972) typology, or with other team personality characteristics to predict team outcomes. For example, teams composed of highly extraverted yet disagreeable people might be unlikely to develop cooperative norms that stipulate helping and cooperation. Future research should explore these possibilities.

Third, we did not examine the relative ability levels of individuals on teams. It is possible that the ability levels of an influential team member may interact with the personality trait of that individual to influence a team’s fit and effectiveness. For example, even though extraverts often have a desire to be assertive and assume a leadership role, it does not necessarily mean that they have the skills required to be a competent leader of a technically proficient team. If the most extraverted member of a team attempts to assume a leadership role but does not have the competence to effectively lead, the team’s overall performance may suffer.

Fourth, future research should consider the effect that personality facets, particularly those of extraversion, have on norms and helping behaviors in teams, and whether there are curvilinear relationships between these facets and helping behaviors. For example, there are facets of extraversion that tap aspects of both dominance and sociability, which may have differential relationships with helping behaviors in teams (Costa & McCrae, 1992). A team composed of individuals varying in their levels of dominance might be beneficial, whereas a team composed of individuals varying in their levels of sociability might hurt team functioning. In the case of agreeableness, having too many altruistic individuals might result in little work actually getting done as these individuals are predisposed toward helping others at the expense of task behaviors. Along these same lines, future researchers should examine whether variance on traits in teams that has been manipulated in a laboratory setting results in larger relationships with criteria than naturally occurring variance on traits, where it is less likely to have teams at the variance extremes (Humphrey et al., 2007; Prewett, Walvoord, Stilson, Rossi, & Brannick, 2009). It might be the case that, in field settings, range restriction attenuates relationships (Schmidt, Shaffer, & Oh, 2008), in this case, between personality variance and outcomes.4

Finally, in this study, we utilized supervisor ratings of helping behaviors. We chose to use supervisor ratings in order to alleviate problems associated with shared common method variance among the antecedents, mediator, and outcome. However, future researchers could collect helping behavior ratings from peers and antecedent measures from another source, such as family members. Such data would provide a test of these hypotheses with different data sources.

Conclusion

This study elucidates the relationship among the personality mix of team members, the emergence of cooperative team norms, and individual team members’ helping behaviors. We found that teams composed of individuals who are different in terms of their levels of extraversion are more apt to develop cooperative group norms that foster and encourage helping behaviors. Beyond the practical and theoretical implications of these results, we hope our investigation will spur future work that explores the relationship between models of team-level fit, the group norms that can develop, and the

4 We thank an anonymous reviewer for suggesting these future research directions.
individual helping behaviors that ultimately result from such factors.

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