Does the Justice of the One Interact With the Justice of the Many? Reactions to Procedural Justice in Teams

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This article reported the results of 2 studies that examined reactions to procedural justice in teams. Both studies predicted that individual members' reactions would be driven not just by their own procedural justice levels but also by the justice experienced by other team members. Study 1 examined intact student teams, whereas Study 2 occurred in a laboratory setting. The results showed that individual members' own justice interacted with others' justice, such that higher levels of role performance occurred when justice was consistent within the team. These effects were strongest in highly interdependent teams and weakest for members who were benevolent with respect to equity sensitivity.

Organizations continue to rely on teams as a means of structuring work (Devine, Clayton, Philips, Dunford, & Melner, 1999; Lawler, Mohrman, & Ledford, 1995). Teams act as a mechanism for pooling knowledge while placing decision-making authority in the hands of those closest to the work. They also provide a forum for between-person synergy, potentially improving creativity, innovation, and adaptability. In addition, teams provide flexibility for many production tasks, as members can rotate and substitute for one another during the creation process. Indeed, some tasks require teams simply because of the total resources that must be allocated. From this perspective, team-based cooperation "justifies itself, then, as a means of overcoming the limitations restricting what individuals can do" (Barnard, 1938, p. 23).

Teams can be defined as a collection of individuals who work together to complete some task, who share responsibility for collective outcomes, and who see themselves and are seen by others as a social entity (Cohen & Bailey, 1997; Guzzo & Dickson, 1996; Hackman, 1987; Sundstrom, DeMeuse, & Futrell, 1990). Teams can be differentiated from other kinds of work groups, such as departments or committees, by the depth and nature of their interdependence. By definition, teams possess two forms of structural interdependence, defined by Wageman (2001) as features of the work context that define a relationship between entities built on mutual dependence. First, teams possess task interdependence—features of the work itself that require multiple individuals to cooperate to complete the work. Second, teams possess outcome interdependence—the degree to which shared rewards or consequences are contingent on collective (rather than individual) performance (Wageman, 2001).

The increased use of teams has both practical and theoretical implications. From a practical perspective, organizations must take steps to ensure that employees are committed to their teams and that they perform their roles adequately. From a theoretical perspective, scholars must consider the impact that team contexts have on the validity of findings derived from other settings. The team context offers an additional range of stimuli capable of altering members' beliefs and reactions. In particular, team contexts result in more intensive social comparisons among individual members because of the increased frequency and importance of team interactions.

Consider the role of procedural justice in team contexts. *Procedural justice* is defined as the fairness of decision-making processes (Leventhal, 1980; Thibaut & Walker, 1975). It is distinct from *distributive justice,* which is defined as the fairness of decision outcomes (Adams, 1965; Leventhal, 1976). Past research has illustrated the benefits of procedural justice, which has been linked meta-analytically to a variety of reactions, including job performance (Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Such results offer straightforward implications for managers: Experiencing just treatment can result in tangible improvements in employee reactions.

However, a fundamental question relevant in team contexts remains unanswered: Does the justice experienced by other team members affect reactions as well? If so, it is not enough to treat individual members in a just manner—the other members must also enjoy such treatment. Unfortunately, past research has failed to differentiate the effects of individuals' own justice and their assessment of others' justice. It is important to understand the relative effects of own and others' justice because treatment may vary within teams. Teams are becoming more diverse over time,

with members possessing different functions, backgrounds, or demographic characteristics (Williams & O'Reilly, 1998). Moreover, team leaders are often advised to dole out influence, support, and attention on a dyad-by-dyad basis (Gerstner & Day, 1997; Graen & Scandura, 1987). These factors increase the likelihood that own and others' justice will differ, despite the fact that they possess two common causes (the team's leader and the organization's formal procedures).

This article reports the results of two studies examining the effects of own and others' justice on role performance in team contexts. The general proposition guiding this research was that the highest levels of role performance would be demonstrated when own and others' justice were consistent within the team. Study 1 examined these effects in the context of ongoing student project teams, whereas Study 2 manipulated justice levels in a laboratory setting.

Procedural Justice in Teams

The procedural justice construct was introduced by Thibaut and Walker (1975) in their writings on conflict resolution procedures. Thibaut and Walker argued that procedural justice is fostered by allowing disputants to control the evidence presented during a procedure and by allowing them to influence the actual resolution decision. Specifically, they argued that "On the whole, distribution of control appears to be the best predictor of fairness and therefore of the preference for procedures" (p. 121). This control-based view has been one of the most popular conceptualizations of procedural justice for the past 2 decades (Colquitt et al., 2001) and has widespread applicability. For example, research has repeatedly shown that allowing employees to complete self-appraisals can enhance the perceived fairness of performance evaluation procedures (Gilliland & Langdon, 1998).

Whereas Thibaut and Walker (1975) essentially equated procedural justice with control, Leventhal (1980) suggested that procedural justice can be fostered by adhering to six rules of fair treatment. Specifically, procedures should be (a) consistent across people and time, (b) based on accurate information, (c) unbiased, (d) correctable, (e) representative of all groups' concerns, and (f) ethical. Leventhal's rules also have widespread applicability. For example, employees view compensation systems as more fair when pay-raise decisions are performed consistently across people and are based on valid, accurate information (Miceli, 1993).

The results of a recent meta-analysis of 183 studies conducted between 1975 and 2000 supported the relationship between control or rule-based criteria and procedural fairness perceptions (Colquitt et al., 2001). This review also linked procedural justice (whether operationalized in terms of control-based criteria, rule-based criteria, or fairness perceptions) to job satisfaction, organizational commitment, trust, citizenship behavior, and job performance. Although such outcomes would certainly seem valuable in team contexts, most of the studies included in the meta-analysis lacked the structural interdependence that defines teams.

A handful of studies have begun to generalize these relationships to team contexts in which individuals possess both task and outcome interdependence. For example, Korsgaard, Schweiger, and Sapienza (1995) examined procedural justice in the context of laboratory decision-making teams. They linked control-based justice to member attachment to the team, commitment to team

decisions, and trust in the leader. Phillips and colleagues also examined the effects of procedural justice in laboratory teams (Phillips, 2002; Phillips, Douthitt, & Hyland, 2001). They linked control-based procedural justice to members' satisfaction with the leader, attachment to the team, and efficacy perceptions. Finally, Colquitt and colleagues linked rule-based justice to member commitment and helping behavior, along with team performance and absenteeism (Colquitt, 2001; Colquitt, Noe, & Jackson, 2002).

Although these studies have proven valuable in generalizing justice relationships to team contexts, they failed to consider a vital question: Does the justice experienced by others affect members' own reactions? Five studies are relevant to this question, each of which relied on a control-based operationalization of procedural justice. Three of the studies followed a paradigm in which a participant was either given or denied some form of control over the experimental task, as was some unseen fictional other (Ambrose, Harland, & Kulik, 1991; Ambrose & Kulik, 1989; Grienberger, Rutte, & van Knippenberg, 1997). Two of the studies failed to yield significant effects for others' justice on reactions such as satisfaction and intentions to quit the activity (Ambrose et al., 1991; Ambrose & Kulik, 1989). The third study found a significant interaction between own and others' justice such that the least favorable reactions occurred when own justice was low and others' justice was high (Grienberger et al., 1997).

Two studies by Lind, van den Bos, and colleagues have also examined the effects of own and others' justice. In Lind, Kray, and Thompson's (1998) study, 3 participants took part in a computer simulation in which they needed to make suggestions to a confederate supervisor. Own and others' procedural justice were manipulated by responding to the suggestions with affirmative messages (granting control) or negative messages (denying control) and by allowing those responses to be viewed by all 3 participants. None of the manipulations affected performance on the task, and others' justice had only weak effects on ratings of the supervisor. A follow-up study by van den Bos and Lind (2001) manipulated own and others' justice using both control and rule-based operationalizations. Their results showed that participants' affective reactions were higher when own and others' justice were both high.

These five studies provide only equivocal support for others' justice affecting members' own reactions. The predicted interaction has often been nonsignificant, and effects have never been observed for behavioral (as opposed to attitudinal) reactions. Those studies that have examined the Own × Others' Justice interaction have used social comparisons as the theoretical mechanism—a mechanism that has a long history in the justice literature. Relative deprivation theory suggests that individuals react to subjective realities rather than objective realities by basing grievances on social comparisons (Crosby, 1984). Equity theory suggests that individuals do not react just to their own ratios of outcomes to contributions—they compare their personal ratios with those of some comparison other (Adams, 1965).

These theories would predict that members would react more favorably when their own justice matches the levels experienced by others. It is interesting, however, that the social comparison mechanism has rarely been applied to procedural justice. Thibaut and Walker (1975) and Leventhal (1980) seemed to suggest that control-based and rule-based criteria are judged objectively, in absolute rather than relative terms. Indeed, Cropanzano and Ambrose (2001) noted, "In practice, this suggests that procedural

fairness is inferred relative to a theoretical standard, whereas distributive justice is inferred relative to a referent standard" (p. 136).

Recent theorizing has begun to deemphasize this distinction. For example, referent cognitions theory was used to ground the predictions of Ambrose et al. (1991) and Grienberger et al. (1997). The theory predicts that individuals consider *referent outcomes*—which compare the decision event with other easily imagined outcomes—when formulating their reactions (Folger, 1986, 1987). As the theory has evolved, Folger has acknowledged that referent outcomes can actually concern procedural phenomena, as when an individual imagines what would have happened if more control had been granted during a decision-making process (Folger, 1993).

Fairness theory, a subsequent model derived from referent cognitions theory (Folger & Cropanzano, 1998, 2001), also acknowledges that social comparisons play a role when reacting to procedural information. Fairness theory restructures the referent cognitions mechanisms around the concept of counterfactual thinking—a process that forms mental representations of "what might have been." These counterfactuals are built from several ingredients, including speculation, past experiences, norms, and social comparisons. Fairness theory's counterfactuals ask whether an event could have played out differently, whether the authority should have behaved differently, and whether the member would have been better off if one of those alternatives had occurred instead. These questions are asked for both procedural issues and distributive issues. Thus fairness theory provides mechanisms that allow for social comparisons of procedural phenomena within teams.

One should consider the example of a team working on a decision-making task. Past research has shown that control-based operationalizations of procedural justice are associated with member attachment to the team, commitment to team decisions, and trust in the team's leader (Korsgaard et al., 1995; Phillips, 2002; Phillips et al., 2001). Now let one consider the reactions of an individual team member who is afforded little influence over the leader's final decision. Will that member's reactions depend on whether other members are granted similarly low levels (or markedly higher levels) of control? If social comparisons do occur for procedural phenomena, then an interactive effect of own and others' justice should be observed.

Figure 1 represents the predicted form of this interaction effect. The traditional main effect of a member's own procedural justice is qualified by an interaction with others' justice. When others' justice is high, higher levels of own justice are associated with more beneficial reactions. However, when others' justice is low, higher levels of own justice do not have beneficial effects. Taken together, the interaction is such that more beneficial effects occur when justice is consistent within the team. That is, outcomes are higher when members' own justice levels match the levels of others' justice (i.e., when both are high or both are low). This proposed effect forms the foundation for the two studies discussed in the remainder of this article.

Study 1

Study 1 examined the effects of own and others' justice in the context of student project teams. The interaction in Figure 1 was tested using member role performance as the dependent variable. Because past research on justice in team contexts has relied primarily on attitudinal outcomes, it remains unknown whether procedural justice can alter the performance of team members. This is a critical question, because the success of the team often depends on the role performance of all members or even the weakest member (Steiner, 1972). Fortunately, procedural justice has been meta-analytically linked to performance, as Colquitt et al. (2001) found a corrected correlation of .36 between the two variables. Thus the following hypothesis was tested, consistent with Figure 1:

> *Hypothesis 1*: The positive relationship between own procedural justice and role performance will be moderated by others' procedural justice, such that own role performance will be higher when justice is consistent within the team than when justice is not consistent within the team.

Contextual and Individual Moderators

It is important to note that Hypothesis 1 is advanced despite the inconsistent findings of past research. An important contribution of this article lies in the examination of potential moderators that could explain those inconsistencies and establish boundary conditions for the interaction effect. The choice of moderators was guided by the following question: What variables could enhance or neutralize the role of social comparisons within teams? Both studies included contextual and individual moderators to capture both sides of the person–situation distinction. Two specific moderators were examined in Study 1: task interdependence and collectivism.

Task Interdependence

As noted above, teams possess structural interdependence by definition in the form of task and outcome interdependence (Cohen & Bailey, 1997; Guzzo & Dickson, 1996; Hackman, 1987; Sundstrom et al., 1990). Of course, interdependence is not a dichotomous variable that teams either possess or lack. Wageman (2001) reviewed several conditions that can combine to make task interdependence levels more or less intense. In particular, task interdependence depends on the following four factors: (a) how the task is defined to the team, (b) what kinds of rules or instructions are given to the team, (c) the physical technology of the task, and (d) the degree to which necessary skills, resources, or abilities are spread among the group (Wageman, 2001).

Thus, teams possess particularly high levels of interdependence when their task is defined in collective terms rather than by some
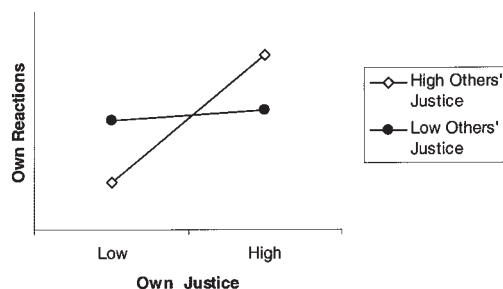

Figure 1. Predicted pattern of Own × Others' Procedural Justice interaction.

division of labor, when rules or instructions require collective meetings or procedures, when the technology demands simultaneous action, and when the inputs to the work are distributed such that everyone must contribute. It is important to note that Wageman (2001) further argued that teams can take their structural interdependence and alter it through their actions. This point captures the distinction between structural interdependence and behavioral interdependence—the amount of task-related interaction actually engaged in (Wageman, 2001; see also Kiggundu, 1981). Teams with high structural interdependence may or may not exhibit high levels of behavioral interdependence and vice versa.

Task interdependence should amplify the effect in Figure 1 by increasing the likelihood of social comparisons between a member and his or her teammates. Members working in highly interdependent conditions must attend to and monitor their teammates to a greater degree (Kiggundu, 1981; Wageman, 2001). Thus task interdependence increases the visibility and salience of teammates' treatment. It also increases discussion among members, which provides an opportunity for judging the justice received by others (Lind et al., 1998). Thus task interdependence should make it more likely that a member will notice when justice varies.

Task interdependence should also foster a norm of equal treatment. Barrett-Howard and Tyler (1986) examined situations that make specific justice rules more or less important to justice judgments. Leventhal's (1980) consistency rule was judged to be most important in task versus socially focused interaction, in formal versus informal interaction, and in cooperative versus competitive interaction. This suggests that consistency with respect to justice should be especially critical under task-interdependent conditions, which are characterized by formal, cooperative, task-based interactions.

> *Hypothesis 2*: The benefits of consistency (in terms of the Own Procedural Justice × Others' Procedural Justice interaction in Hypothesis 1) for own role performance will be stronger when task interdependence is high than when task interdependence is low.

Collectivism

Collectivism can be defined as a social pattern in which individuals see themselves as part of one or more collectives and are motivated by the norms, duties, and goals of those collectives (Triandis, 1995). The visibility of the construct was boosted by Hofstede's (1980) study in which employees in a large multinational corporation answered questions about the importance of various work goals. Hofstede derived a collectivism factor from the survey and used the mean factor scores to create a national index of collectivism. A recent meta-analytic review revealed that between-culture differences in collectivism do exist but that the differences are smaller and less systematic than previously believed (Oyserman, Coon, & Kemmelmeier, 2002).

Triandis, Leung, Villareal, and Clack (1985) were among the first to examine collectivism at the individual level of analysis. They argued that *allocentrism* is a psychological variable that corresponds to the cultural version of collectivism. Allocentric individuals can be found in highly collective countries, such as Venezuela or Columbia, but can also be found in less collective countries, such as the United States or Australia. Subsequent research has dropped the *allocentrism* label in favor of *collectiv-*

ism, though the term *psychological collectivism* is sometimes used to denote the individual-level version of the construct (e.g., Hui, Triandis, & Yee, 1991). Regardless of labeling, past research has conceptualized the construct using multiple dimensions (e.g., preference for group work, concern for the group, willingness to sacrifice for the group; Earley, 1993; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988; Wagner, 1995) and has linked it to a variety of group-benefiting behaviors (Earley, 1989; Gibson, 1999; Moorman & Blakely, 1995).

As with task interdependence, high levels of psychological collectivism should amplify the interaction effect in Figure 1 by increasing the likelihood of social comparisons between a member and his or her teammates. Gibson (1999) suggested that collective group members have an enhanced memory for team-relevant information and a greater tendency to share such information with other members. Individuals who score high on collectivism also communicate more with in-group rather than out-group members and identify more with the collectives to which they belong (Triandis, 1995). Indeed, they are more likely to communicate using pronouns such as *we* rather than *I* (Triandis, 1995). Thus, collective members should be more likely to notice when justice varies within the team.

Past research also suggests that collective individuals value within-group consistency in treatment to a greater degree. Hui et al. (1991) showed that psychological collectivism is positively related to preferences for egalitarian rewards. Similarly, Ramamoorthy and Carroll (1998) showed that collective individuals are more accepting of alternative human resources practices such as equality in rewards. Finally, Waldman (1997) showed that members holding collective tendencies were more likely to prefer a group-based performance appraisal. On the basis of these results, I believed that collective members would be more likely to object to inconsistencies within the team.

> *Hypothesis 3*: The benefits of consistency (in terms of the Own × Others' Procedural Justice interaction in Hypothesis 1) for own role performance will be stronger when members are high in collectivism than when members are low in collectivism.

Method

Participants

Participants were 314 undergraduates (123 men and 191 women) enrolled in an introductory management course at a large state university. All participants received course credit in exchange for their participation.

Procedure

The study was conducted in the context of five-person student project teams in an undergraduate management course. The teams were randomly composed at the beginning of the semester and worked together, both in and out of class, over the entire term. Teams worked on four exercises, each worth 10 points, and one semester-long project worth 80 points. The total available points in the class were 400, meaning that 30% of the students' points were a function of their team's work. This percentage created the kind of outcome interdependence that is considered a definitional part of being in a team (Cohen & Bailey, 1997; Guzzo & Dickson, 1996; Hackman, 1987; Sundstrom et al., 1990).

The four exercises covered the following content areas: selection, training and development, performance management, and compensation. The exercises consisted of creating or improving one of these human resources systems, with the group turning in a single report summarizing and discussing their views and opinions. These reports typically required at least 2 hr of work, much of it spent outside of class. The semester-long project required the teams to create an integrative paper that tied together all of the content domains of the course.

The assignments created structural interdependence in two respects: (a) Outcome interdependence was created through a collective output with a collective (as opposed to individual) reward, and (b) task interdependence was created by defining the assignments as team (as opposed to individual) assignments. Still, behavioral interdependence varied across teams because instructions were not used to govern team processes, the physical technology (i.e., a computer) did not require collective action, and the distribution of relevant skills and abilities varied across teams. Thus, some teams completed the bulk of their work in combined face-to-face meetings whereas other teams split up the assignment and worked more independently.

The justice, task interdependence, and collectivism measures were administered as part of a survey given to students in class. Students were assured that their instructor would receive only aggregated feedback regarding the survey once the semester was complete. The procedural justice items referenced the grading procedures used to decide assignment grades. The timing of the survey was 1 week prior to the final exam, just after the teams had been given the last of their project grades. Thus, all team points had been allocated, and the majority of the overall course's points had been allocated as well (the final exam was 25% of the grade). Given that the instructors were the ones computing the grades, the procedural justice items also referenced the instructors as the enactors of the procedures.

Measures

All measures used a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Role performance. Performance was measured by five-item peer assessments that were completed at home and turned in just before the final exam. The instructors used the measure to gauge contributions to the project. Each member was rated by all 4 of his or her teammates, and members did not rate themselves. Two items assessed beneficial behaviors: "This member did his/her fair share of the work" and "This member was valuable to the group." The other three items assessed negative behaviors and were reverse scored: "This member let other group members do most of the work," "This member did not cooperate well with the group," and "This member was not valuable to the group."

Interrater reliability for the five peer-rated items was assessed using the single-measure form of the intraclass correlation (ICC(1); James, 1982; Shrout & Fleiss, 1979). Each of the *k* ratees assumed the role of a treatment in a one-way analysis of variance (ANOVA), with raters (who were nested under the ratees) providing scores on the five items. The magnitude of the ICC(1) can be interpreted as the reliability associated with a single assessment of the ratee's performance, with high values being in the .30 area (Bliese, 2000). The ICC(1)s for the role performance items were all high: .39 for Item 1, .30 for Item 2, .38 for Item 3, .44 for Item 4, and .40 for Item 5. Within-group agreement was assessed using the r_{wg} index created by James, Demaree, and Wolf (1984; see also Lindell, Brandt, & Whitney, 1999). Unlike ICC(1), r_{wg} considers only within-rater variance by comparing agreement among raters with what would be expected from random ratings. The $r_{wg(j)}$ allows for the examination of within-group agreement at the scale (as opposed to the item) level, with aggregation usually supported by a mean $r_{wg(j)}$ above .70. The role performance scale had an $r_{wg(j)}$ of .91, again supporting aggregation across raters. The scale had a coefficient alpha of .93.

Own procedural justice. Procedural justice was operationalized using what Lind and Tyler (1988) termed a *direct measure.* Specifically, mem-

bers' own procedural justice was assessed with the following two items ($\alpha = .73$): "The grading procedures which decide my own individual grades have been fair" and "My instructor has treated me fairly."

Others' procedural justice. Others' procedural justice was assessed with two similar items ($\alpha = .78$): "The grading procedures which decide my teammates' grades have been fair" and "My instructor has treated my teammates fairly."

Task interdependence. Task interdependence was measured using the following two items taken from Johnson, Johnson, Buckman, and Richards (1988; $\alpha = .75$): "When we worked together in our group, we could not complete the exercise unless everyone contributed" and "When we worked together in our group, everyone's ideas were needed if we were going to be successful."

Collectivism. Collectivism was measured using three items taken from Wagner (1995; $\alpha = .68$): "I prefer to work with others in a group rather than working alone," "Given the choice, I'd rather do a job where I can work alone, rather than doing a job where I have to work with others in a group," (reverse scored) and "Working with a group is better than working alone." The collectivism literature has been plagued by measurement problems, and a recent review pointed to the good psychometric properties of this measure (Earley & Gibson, 1998). However, it is important to note that this measure captures only one dimension of a multidimensional construct.

Control variables. Perceptions of distributive fairness were gathered as a control variable to avoid potential unmeasured variable problems. Four ad hoc items were used ($\alpha = .93$), including "How justified is your grade given your performance in this class?" and "How much do you agree with your grade, given what you have contributed to the class?" (items were measured using a 5-point scale ranging from 1 = *not at all* to 5 = v*ery much*).

Results and Discussion

The means, standard deviations, and correlations for all variables are shown in Table 1. The study's hypotheses were tested using moderated regression, with the results shown in Table 2. In the first step of the regression, I controlled for the effects of distributive fairness. In the second step, I tested the direct effects of own and others' procedural justice, and neither effect was significant. The test of Hypothesis 1 occurred in Step 3, in which I entered the Own × Others' Procedural Justice interaction. The interaction had a significant effect on role performance. The plot of the interaction effect closely resembles Figure 1. High levels of own procedural justice had more positive effects when others were also afforded high levels (i.e., when justice was consistent within the team), supporting Hypothesis 1.

In Step 4 of the regression I examined the main effects of the two moderators, and neither had significant effects. In Step 5 I entered all possible two-way interactions, which had to be entered before examining the three-way interactions used to test Hypotheses 2 and 3. The set of two-way interactions had a significant effect, driven by the interaction of others' procedural justice with task interdependence and collectivism. Although not the subject of any hypotheses, these interactions indicated that others' justice had stronger effects on role performance when task interdependence or collectivism was high.

Finally, in Step 6 I entered the three-way interactions. As a set, the interactions had a significant effect, driven by the three-way interaction of own procedural justice, others' procedural justice, and task interdependence. The plot of this interaction is shown in Figure 2. Differences in own and others' procedural justice had much stronger effects on role performance when task interdepen-

Table 1
Descriptive Statistics and Zero-Order Correlations for Study 1

Variable	M	SD	1	2	3	4	5	6
Justice variables								
1. Own justice	4.10	0.74	—					
2. Others' justice	4.07	0.80	.69*	—				
Moderators								
3. Task interdependence	2.95	1.00	.08	.03	—			
4. Collectivism	2.93	0.67	−.07	−.03	.15*	—		
Outcome variable								
5. Role performance	4.55	0.46	.10*	.08	−.03	−.02	—	
Control variable								
6. Distributive fairness	3.69	0.94	.50*	.33*	.01	.01	.10*	—

Note. $N = 282$ after listwise deletion.
* $p < .05$, one-tailed.

dence was high, supporting Hypothesis 2. The three-way interaction with collectivism was not significant, failing to support Hypothesis 3.

Study 2

Although the results of Study 1 were supportive, some limitations should be noted. First, a correlational design was used, making it impossible to say that the interaction of own and others' justice caused variation in role performance. Second, procedural justice was assessed globally, making it difficult to compare the results of Study 1 with past research, most of which has relied on control-based operationalizations (e.g., Ambrose et al., 1991; Grienberger et al., 1997; Lind et al., 1998). Third, the measure of role performance was a peer report focusing on contributions, as opposed to an objective bottom-line outcome. Finally, only one type of reaction was examined. Although member role performance is undoubtedly important, it is necessary to consider other types of reactions.

Study 2 addressed each of these limitations. An experimental design was utilized to manipulate both own and others' procedural justice using the control-based operationalization used in past research. Moreover, multiple outcomes were examined, including procedural fairness perceptions, cooperation, conflict, and an objective measure of role performance. The same general prediction as in Study 1 was tested in Study 2, that the main effect of members' own justice would be qualified by an interaction with others' justice.

> *Hypothesis 4*: The positive effect of own procedural justice on fairness perceptions, cooperation, conflict, and role performance will be moderated by others' procedural justice, such that more favorable reactions will occur when justice is consistent within the team than when justice is not consistent within the team.

Contextual and Individual Moderators

Although the interaction of own and others' justice received support in Study 1, one should remember that past research remains inconsistent in its findings. Thus moderators of this effect were again examined. As in Study 1, the moderators focused on variables that should increase the likelihood of

Table 2
Moderated Regression Results for Study 1

| Regression step	Role performance		
	R^2	ΔR^2	β
1. Distributive fairness	.01	.01	0.10
2. Own justice	.01	.00	0.06
Others' justice			0.02
3. Own Justice × Others' Justice	.03*	.02*	0.60*
4. Task interdependence	.03	.00	−0.03
Collectivism			−0.00
5. Own Justice × Task Interdependence	.09*	.06*	−0.31
Others' Justice × Task Interdependence			−0.98*
Own Justice × Collectivism			0.33
Others' Justice × Collectivism			1.24*
6. Own Justice × Others' Justice × Task Interdependence	.11*	.02*	2.69*
Own Justice × Others' Justice × Collectivism			0.08

Note. $N = 282$ after listwise deletion.
* $p < .05$.
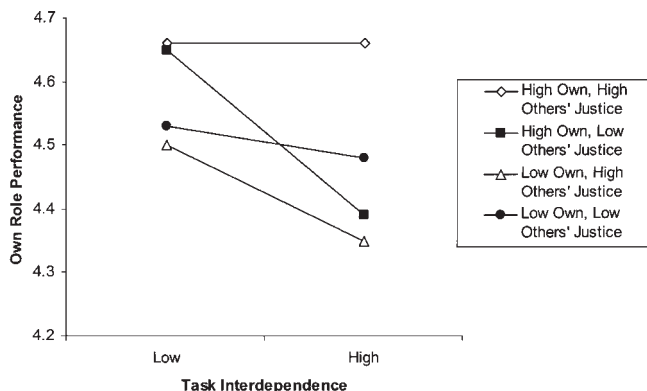
Figure 2. Own × Others' Justice × Interdependence interaction for performance (Study 1).

social comparisons within teams. The contextual moderator was again task interdependence, and the individual moderator was equity sensitivity.

Task Interdependence

Study 2 attempted to replicate the effect shown in Figure 2, in which task interdependence amplified the effects of differences in own and others' justice. I hypothesized that task interdependence should increase the likelihood of social comparisons within the teams by increasing the attention devoted to other members (Kiggundu, 1981; Wageman, 2001) while fostering a norm of equal treatment (Barrett-Howard & Tyler, 1986).

> *Hypothesis 5*: The benefits of consistency (in terms of the Own × Others' Procedural Justice interaction in Hypothesis 4) for fairness perceptions, cooperation, conflict, and role performance will be stronger when task interdependence is high than when task interdependence is low.

Equity Sensitivity

Equity sensitivity is a stable characteristic that assesses one's preferences for and sensitivity to various equity levels (Huseman, Hatfield, & Miles, 1987; King, Miles, & Day, 1993; Miles, Hatfield, & Huseman, 1989). Equity sensitivity can be conceptualized using two ends of a continuum. At one end is the benevolent pattern, characterized by a tolerance for situations in which ratios of inputs to outcomes do not match those of a comparison other (Huseman et al., 1987). Individuals high in benevolence are more focused on ensuring that their inputs are adequate and do not attend to outcomes as much as other individuals (King et al., 1993). At the other end is the entitled pattern, characterized by an intolerance of underreward situations. Individuals near this end of the equity sensitivity continuum are more focused on the receipt of outcomes and are less forgiving of any outcome inconsistencies (King et al., 1993).

Similar to collectivism, equity sensitivity is an individual difference that should affect the likelihood of social comparisons between a member and his or her teammates. Huseman et al. (1987) initially suggested that benevolents are "givers," whose happiness is maximized when they are underrewarded relative to

peers and minimized when they are overrewarded relative to peers (p. 225). This matches the lay definition of benevolence and is also congruent with the use of the term in the trust literature (Mayer, Davis, & Schoorman, 1995). However, subsequent research suggests that this conceptualization is too limited. King et al. (1993) showed that benevolent individuals reported higher levels of satisfaction than did entitled individuals in both overreward and underreward inequity conditions.

King et al.'s (1993) findings suggest that benevolent individuals either engage in fewer social comparisons or are less affected by the social comparisons that they do make. Given the implications of equity sensitivity for reactions to under- or overreward circumstances, it seems logical that equity sensitivity could alter reactions to differences in procedural justice. However, equity sensitivity has been used only in relation to outcome distributions and never in relation to procedural variables. Thus in the current study I attempted to generalize King et al.'s findings to procedural differences in teams.

> *Hypothesis 6*: The benefits of consistency (in terms of the Own × Teammates' Procedural Justice interaction in Hypothesis 1) for fairness perceptions, cooperation, conflict, and role performance will be weaker for more benevolent members than for more entitled members.

Method

Participants

Participants were 300 undergraduates (164 men and 136 women) enrolled in an introductory management course at a large state university. Participants signed up for time slots during the first day of the course, with slots limited to eight people. They waited in a lobby on arriving at the laboratory, and teams were randomly formed from the participants present. Two experimental sessions could be run at one time, and any additional participants took part in an overflow study. All participants received course credit in exchange for their participation and were given a chance to earn a small cash incentive ($10) based on their team's performance. This incentive was given to the participants in the top three teams within each of the experimental conditions (around 18% of the teams). The use of the incentive encouraged a baseline level of motivation and psychological engagement on the part of the participants.

Task

Participants worked on a special version of the Team Interactive Decision Exercise for Teams Incorporating Distributed Expertise (TIDE[2]) computer simulation. An extensive description of this task is given in Hollenbeck et al.'s study (1995). Four participants, termed Alpha, Bravo, Charlie, and Delta, served as a team and were stationed at networked computer terminals. Participants were required to classify aircraft as friendly or threatening on the basis of nine pieces of aircraft information (size, speed, range, altitude, direction, angle, radar type, frequency, direction, and corridor position). It was explained that this task was modeled after the one performed by Air Force command and control teams. Bravo, Charlie, and Delta (who were referred to as staff members) provided classification recommendations to the team leader, Alpha. Alpha was actually one of the experimenters serving as a confederate.

Bravo, Charlie, and Delta were each responsible for gathering four of the nine pieces of aircraft information, and they were given extensive training on how to transform information values into probable threat levels. For example, Bravo was responsible for gathering size, speed, radar type, and frequency information and was trained on what types of values were

threatening (e.g., smaller aircraft were more threatening). Participants gathered some of their information by using their Measure menu, which instantly provided information values to them. However, participants could measure only a subset of their assigned information, and they depended on their teammates to provide them with the remainder. For example, Bravo could measure size, range, direction, and corridor position but was in charge of interpreting only size. Bravo relied on Charlie and Delta to provide information on Bravo's other assigned information (speed, radar type, and frequency) by sending that information through the network. In turn, Bravo provided Charlie and Delta with the range, direction, and corridor position information they required.

Team members were explicitly instructed that all pieces of information were equally important (i.e., speed information was not any more useful than was radar type information) and were informed that Alpha was so instructed as well. This instruction was given to prevent participants from attributing their levels of control to the set of information they gathered. Team members were also told that Alpha could measure all nine pieces of information independently but was given only very general training on how to interpret the values. They were also told not to request information from Alpha, because he or she had to fulfill other duties as team leader and may not have time to respond to them. In addition, all team members could type text messages to one another through the computer network. Messages from Alpha were sent to all 3 staff members simultaneously and were visible to all team members.

Once Bravo, Charlie, and Delta had studied the four pieces of information they were in charge of interpreting, they made recommendations to Alpha in terms of a probable aircraft threat level. Their recommendations took the form of a course of action on a 7-point continuum of aggressiveness (1 = *ignore,* 2 = *review,* 3 = *monitor,* 4 = *warn,* 5 = *ready,* 6 = *lock-on,* and 7 = *defend*). For example, if Bravo's size and speed information were moderately threatening and the frequency and radar type information were very threatening, he or she would likely recommend a *ready* or a *lock-on* to Alpha. Once Bravo, Charlie, and Delta had each made his or her recommendation, Alpha combined those recommendations to form one final team decision. This combination was performed using a script that manipulated the extent to which specific members' recommendations were considered.

Once Alpha registered the final decision, that decision was compared with the correct one. Teams were given feedback via the computer on the absolute difference between the team's final decision and the correct decision. No difference was termed a *hit,* a 1-point difference was a *near miss,* a 2-point difference was a *miss,* a 3-point difference was an *incident,* and a 4-point or more difference was a *disaster.* This same process was then repeated for 36 trials, including 3 practice trials. Trials alternated between 150 s and 120 s in length.

In addition to the decision-accuracy feedback, team members were given bogus feedback on the correlation between their recommendation and Alpha's final decision over the course of the trials. This feedback took the form of a green bar that used a scale ranging from 0 (*no correlation*) to 1 (*a perfect correlation*). This form of feedback has been used in past research using TIDE[2] (Hollenbeck, Ilgen, LePine, Colquitt, & Hedlund, 1998; Phillips, 2002). In the current study, the green bars were scripted to achieve specific levels depending on the experimental condition, and each member's bar was viewable by the entire team.

Manipulations

The manipulations formed a 2 (own procedural justice: high or low) × 2 (others' procedural justice: high or low) × 2 (task interdependence: high or low) design.

Own procedural justice. Own procedural justice was manipulated by providing members with varying levels of control over the team's final decisions. The manipulation assumed three forms. First, the script used by the confederate to combine Bravo's, Charlie's, and Delta's recommendations into one overall decision weighed members' recommendations as 1.63 in the high condition and 0.38 in the low condition.[1] Whereas

participants could, to some extent, naturally perceive how much they were being weighed by the leader, the manipulation also provided feedback on the size of those weights via the green bars mentioned above. In the high condition, the bars centered around an 8-cm length, whereas in the low condition the bars centered around a 2-cm length. Third, the manipulation used text messages transmitted from the confederate to Bravo, Charlie, and Delta indicating the presence of control, similar to the justice manipulation used by Lind et al. (1998). Sample messages were "BRAVO: I leaned toward your call on that one" and "CHARLIE: I leaned toward your input there." In designing the messages, great care was taken to ensure that the messages sounded neutral rather than overly respectful and did not explain the reasons behind the presence of control, ensuring that the procedural justice manipulation was not confounded with interactional justice (Bies & Moag, 1986). In the high condition the participants received six text messages (three between Trials 10 and 19 and three between Trials 20–36), whereas in the low condition the participants received zero messages.[2]

Others' procedural justice. Others' procedural justice was manipulated by varying the levels of control given to a member's teammates. Control was manipulated in the same three forms: the weights that Alpha used to combine members' recommendations, the green bars assigned to members' stations, and the text messages sent to the members. As in Lind et al.'s (1998) study, participants could read messages sent to them by Alpha and could also read messages sent to their teammates by Alpha. It was explained that this type of monitorable communication is used by real Air Force teams. The same levels were used to create the following high and low levels of justice: 1.63 versus 0.38 weights, 8- versus 2-cm green bars, and six versus zero text messages.

Twenty 3-person teams were run under the uniformly high control condition. The 60 participants in these teams were in the high own justice–high others' justice condition. Twenty 3-person teams were run under the uniformly low control condition. The 60 participants in these teams were in the low own justice–low others' justice condition. Sixty 3-person teams were run under the varying control condition. Sixty of these 180 team members received more control than did either of their teammates and were in the high own justice–low others' justice condition. Sixty of these 180 team members received less control than did either of their teammates and were in the low own justice–high others' justice condition. The remaining 60 participants received more control than did one of their teammates but less control than did the other (with weights of 1.00, green bars of 5 cm, and three messages). These 60 participants were therefore omitted from the 2 × 2 design. Thus all analyses were based on N = 240 participants.[3]

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[1] The relative magnitudes of these recommendation weights were scaled to be 1 standard deviation higher and 1 standard deviation lower than the average weights from past studies using the TIDE[2] simulation (Hollenbeck, Colquitt et al., 1998; Hollenbeck, Ilgen et al., 1998).

[2] These frequencies were also based on past research using the TIDE[2] simulation (Hollenbeck, Colquitt et al., 1998; Hollenbeck, Ilgen et al., 1998).

[3] These "in-between" participants received intermediate levels of control. Their recommendations were weighed 1.00 by Alpha, their green bars were 5 cm in length, and they received three text messages. Exploratory analyses revealed that the 60 in-between participants did not differ from the remaining 240 participants on any of the four dependent variables. Thus there was no effect for being "in between" versus not "in between." However, these participants did feel significantly more fairly treated than did the low own control–high teammates' control participants, $t(298) =$ 4.34; M = 3.49 versus 3.06; $p < .01$, and they felt significantly less fairly treated than did the high own control–high teammates' control participants, $t(298) = -2.42$; M = 3.49 versus 3.73; $p < .05$. The in-between participants also felt less conflict than did the low own control–low teammates' control participants, $t(298) = -2.19$; M = 1.99 versus 2.20; $p < .05$, and the low own control–high teammates' control participants, $t(298) = -1.90$; M = 1.99 versus 2.17; $p < .06$.

Task interdependence. Task interdependence was manipulated by varying the degree to which members depended on their teammates in gathering their assigned information. In high task-interdependence conditions, team members could measure only one of the four pieces of information they were in charge of gathering. This meant that they relied on their teammates to send them the other three pieces of information. One of those pieces of information could be delivered by either teammate and the other two could be delivered only by one specific teammate. In low task-interdependence conditions, team members could measure three of the four pieces of information they were in charge of gathering, meaning that they relied on their teammates for only one piece of information. That piece came from one specific teammate. In Wageman's (2001) terms, the manipulation affects structural task interdependence by altering the distribution of resources and information among individuals.

Procedure

Four participants were brought into one of the computer rooms where they filled out a consent form. One of the participants was then led from that room to another room, ostensibly to fill the role of Alpha. It was explained that Alpha would be separated from the other 3 team members because actual Air Force teams are characterized by geographic separation. In reality, this person then took part in a separate research study. The three remaining participants then received a booklet that provided an overview of the decision-making task. After reading the booklets for 10 min, the participants were given 45 min of training consisting of three practice trials. Participants next completed a survey including the measure of equity sensitivity.

The simulation then began with Trial 4, at which point the experimenter left the room and assumed the role of Alpha (previously filled by another member of the research laboratory's staff). During these initial trials, the green bars gradually drifted toward their manipulated level, arriving there on Trial 10. On Trial 9, Alpha sent all participants a text message asking them to input their recommendations in a timely manner ("ALL: I need about 20–30 seconds to look at everything"). The halfway point of the experiment was reached on Trial 19, after which there was a short intermission to fill out a survey that included the justice condition manipulation check items and the measure of fairness perceptions. Participants then completed the remaining trials (Trials 20–36). After the final trial they were given a final survey, which included the measure of conflict. Participants were then given a general debriefing, which was supplemented by a full debriefing at the conclusion of the semester.

Measures

Procedural fairness. Procedural fairness perceptions were assessed with five items ($\alpha = .71$). Samples included "The procedure Alpha has used to make the final team decision has been fair to me," "The way Alpha has made the final team decision has been fair to me," and "The procedure Alpha has used in making the final team decision has been free of bias." ($1 = strongly\ disagree$ to $5 = strongly\ agree$).

Conflict. The seven-item measure used by Saavedra, Earley, and Van Dyne (1993) was used to assess conflict ($\alpha = .79$). Samples included "I found myself unhappy and in conflict with members of my group," "I found myself in conflict with other group members because of their actions (or lack of actions)," and "There was a lot of tension between myself and others in the group." ($1 = strongly\ disagree$ to $5 = strongly\ agree$).

Cooperation. Cooperation was assessed using preexisting indices in TIDE^2. The simulation tracks when members ask for information from a teammate, when that teammate receives that request, when that teammate responds to that request, and when the member receives the requested information. From this information, TIDE2 outputs the following indices: slights (failing to read an information request), unresponsives (reading an

information request but not acting on it), lectures (sending information without a request), and learns (sending information in response to a request). Cooperation by an individual team member was operationalized as the number of times a member performed lectures and learns minus the number of times a member performed slights and unresponsives, averaged across Trials 10–36. Because I was treating multiple trials as multiple items, cooperation had an alpha of .95.

Role performance. Role performance was operationalized using decision-making accuracy. The specific accuracy index was mean-squared error, the square of the difference between what the participant should have recommended to Alpha (on the basis of the four pieces of information they were in charge of) and what the participants actually did recommend, aggregated across Trials 10–36. Gigone and Hastie (1997) argued that mean-squared error is a superior measure of decision-making accuracy because it gives more weight to extreme errors, does not ignore the absolute differences between decisions and true scores (unlike correlation-based measures), and can be decomposed into more specific, complementary accuracy facets (see Hollenbeck, Colquitt, Ilgen, LePine, & Hedlund, 1998). In the current study, mean-squared error was given a negative sign so that higher (i.e., less negative) values represented higher levels of accuracy. Because I was treating multiple trials as multiple items, the mean-squared error had an $\alpha = .71$. It is important to note that this measure is conceptually different than that used in Study 1. This measure focuses less on member behaviors and more on the bottom-line outcome of members' behaviors (i.e., whether the recommendation was accurate).

Equity sensitivity. Equity sensitivity was assessed using the measure validated in King and Miles's (1994; $\alpha = .75$) study. The instructions read "The questions below ask what you'd like for your relationship to be with any organization for which you might work. On each question, divide 10 points between the two choices (choice A and choice B) by giving the *most* points to the choice that is *most* like you and the *fewest* points to the choice that is *least* like you. You can, if you'd like, give the same number of points to both choices. And you can use zeros if you like." One item read, "I would be more concerned about: (A) What I received from the organization; (B) What I contributed to the organization." Another item read, "It would be more important for me to: (A) Get from the organization; (B) Give to the organization." Scores were created by summing the number of points allocated to Option B for the five items. Thus higher scores represented higher levels of benevolence.

Control variables. As in Study 1, perceptions of distributive fairness were assessed as a control variable. The outcome was the team's score at the conclusion of the simulation, which was affected by the leader's behavior and decided the team's eligibility for the cash incentive. Participants were asked to judge how fair the score was using three items with the following anchors: 1 (*it was unfair*) to 5 (*it was fair*), 1 (*it was unjust*) to 5 (*it was just*), and 1 (*it was unsatisfactory*) to 5 (*it was satisfactory*; these three items had an alpha of = .81).

Results and Discussion

Manipulation Checks

The manipulation check of own control was assessed with the following item: "My recommendations have influenced Alpha's final decision" ($1 = strongly\ disagree$ to $5 = strongly\ agree$). An ANOVA yielded the anticipated main effect for own control, $F(1, 238) = 64.97, p < .01; M_{high} = 3.44, M_{low} = 2.58, \eta^2 = 0.22$. The manipulation check of others' control was assessed with the following item: "My teammates have had a lot of influence over Alpha's final decision" ($1 = strongly\ disagree$ to $5 = strongly\ agree$). An ANOVA also yielded the anticipated main effect for others' control, $F(1, 238) = 48.25, p < .01; M_{high} = 3.72, M_{low} = 3.05; \eta^2 = 0.17$. The manipulation check of task interdependence

was assessed by measuring how often participants asked their teammates for information, on average, per trial. An ANOVA yielded the anticipated main effect for task interdependence, $F(1, 238) = 157.56$, $p < .01$; $M_{high} = 1.79$, $M_{low} = .37$, $\eta^2 = 0.40$.

Tests of Hypotheses

The means, standard deviations, and correlations are shown in Table 3, and the regression results are shown in Table 4. In step Step 1 I controlled for the effects of distributive fairness, which was significantly related to three of the outcomes. In Step 2 I examined the direct effects of own and others' justice. Own justice had a positive effect on fairness perceptions and a negative effect on conflict. In Step 3 I entered the Own × Others' Justice inter-action used to test Hypothesis 4. The interaction had a significant effect on fairness perceptions, cooperation, and decision-making accuracy but not conflict. Each plot resembled the pattern in Figure 1, supporting Hypothesis 4.

In Step 4 I examined the main effects of the two moderators, with neither having significant effects. In Step 5 I entered all possible two-way interactions, which had to be controlled before examining the three-way interactions. Finally, Step 6 entered the three-way interactions, with significant results observed for con-flict, cooperation, and decision-making accuracy using task inter-dependence and fairness perceptions and for conflict using equity sensitivity. Sample plots are shown in Figures 3 and 4. Differences between own and others' justice had stronger effects when task interdependence was high and weaker effects when members were more benevolent. These results offer support for Hypotheses 5 and 6.

General Discussion

As noted at the outset, the increased use of teams has both practical and theoretical implications. From a practical perspec-tive, scholars must examine methods of improving performance in team contexts. From a theoretical perspective, scholars must ex-amine the impact of the team context on the validity of findings derived from less interdependent contexts. With that in mind, the two studies reported here examined procedural justice in teams.

The results of the two studies suggest that treating members in a just manner does have some practical benefit. Members' own procedural justice levels were positively related to their role per-formance (in Study 1) and to their conflict perceptions (in Study 2). This adds to the handful of existing studies on procedural justice in teams, which have linked members' justice to attachment to the team, commitment to team decisions, leader evaluations, and helping (Colquitt, 2001; Colquitt et al., 2002; Korsgaard et al., 1995; Phillips, 2002; Phillips et al., 2001).

However, what stands out most from these results is the impor-tance of considering the impact of others' procedural justice. Members seemed to use the social comparisons made possible by team contexts when reacting to justice levels. As a result, the traditional main effect of members' own justice was qualified by an interaction in which more positive reactions occurred when treatment was consistent within the team. Indeed, this interaction explained 8 times more variance in members' cooperation and performance than did the own justice main effect.

Past research has been inconclusive about the importance of own versus others' procedural justice comparisons (Ambrose et al., 1991; Ambrose & Kulik, 1989; Grienberger et al., 1997; Lind et al., 1998; van den Bos & Lind, 2001). However, the previous studies did not use true team contexts, as the "other" was fre-quently fictional, never to be seen by the participants. The two studies reported here placed participants in true teams, marked by the interdependence, common fate, and collective identity that have come to define the team label (Cohen & Bailey, 1997; Guzzo & Dickson, 1996; Hackman, 1987; Sundstrom et al., 1990).

The interaction of own and others' justice was demonstrated for a variety of outcomes, including role performance (Studies 1 and 2), procedural fairness perceptions (Study 2), and cooperation (Study 2). More important, both studies illustrated the boundary conditions for the interaction. Specifically, the interaction tended to be stronger as task interdependence became higher, an effect that was significant in four of five tests. The interaction tended to be weaker when members were more benevolent in terms of equity sensitivity, though that effect was significant in only two of four tests. Less support was shown for the moderating role of collec-

Table 3

Descriptive Statistics and Zero-Order Correlations for Study 2

Variable	M	SD	1	2	3	4	5	6	7	8	9
Justice manipulations											
1. Own justice	1.50	0.50	—								
2. Others' justice	1.50	0.50	.00	—							
Moderators											
3. Task interdependence	1.50	0.50	.00	.00	—						
4. Equity sensitivity	27.12	5.46	−.06	.09	−.02	—					
Outcome Variables											
5. Fairness perceptions	3.44	0.56	.29*	−.06	−.10	.03	—				
6. Conflict	2.11	0.59	−.20*	−.08	.01	−.13*	−.40*	—			
7. Cooperation	0.15	3.70	−.06	.03	−.05	−.04	.10	−.15*	—		
8. Decision-making accuracy	−1.78	1.54	.04	−.08	−.11*	−.07	.14*	−.14*	.36*	—	
Control variable											
9. Distributive fairness	3.74	0.89	.22*	.18*	.04	.17*	.31*	−.35*	.14*	.12*	—

Note. N = 240.
* $p < .05$, one-tailed.

Table 4
Moderated Regression Results for Study 2

Regression step	Procedural fairness			Conflict			Cooperation			Decision accuracy		
	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2	β
1. Distributive fairness	.09*	.09*	0.31*	.11*	.11*	−0.33*	.02*	.02*	0.12*	.01	.01	0.11
2. Own justice	.16*	.07*	0.24*	.12*	.01	−0.09	.02	.00	−0.09	.02	.01	0.01
Others' justice			−0.10			0.00			0.00			−0.10
3. Own Justice × Others' Justice	.22*	.06*	1.15*	.12*	.00	0.06	.05*	.03*	0.70*	.04*	.02*	0.57*
4. TI	.23*	.01	−0.11	.13*	.01	−0.01	.06*	.01	−0.06	.06*	.02	−0.12
ES			0.03			−0.13			−0.07			−0.08
5. Own Justice × TI	.26*	.03	−0.28	.17*	.04*	0.48	.06	.00	−0.16	.08*	.02	0.13
Others' Justice × TI			−0.45			0.42			0.10			−0.37
Own Justice × ES			−0.47			−0.04			−0.16			−0.43
Others' Justice × ES			−0.48			0.67*			−0.33			0.24
6. Own Justice × Others' Justice × TI	.28*	.02*	0.14	.21*	.04*	−2.62*	.10*	.04*	2.71*	.11*	.03*	2.51*
Own Justice × Others' Justice × ES			−3.82*			1.97*			−1.88			−1.04

Note. $N = 240$. TI = task interdependence; ES = equity sensitivity.
* $p < .05$.

tivism, though collective members were more affected by teammates' justice.

Practical Implications

These results suggest that the practical implications of procedural justice are more complex in team contexts. It is not enough to treat an individual member in a just manner in an effort to boost his or her role performance. As suggested in Figure 1, that practice could have a moderate benefit, a large benefit, or no benefit at all, depending on what happens to other team members. This is important to consider, because many factors conspire to create inconsistent treatment within teams. For example, diversity in teams may create subtle differences in member treatment (Williams & O'Reilly, 1998). Alternatively, leader philosophies may dictate that information, influence, support, and attention be doled out on a dyad-by-dyad basis, as in leader–member exchange theories of leadership (Gerstner & Day, 1997; Graen & Scandura, 1987).

Thus, some differences in treatment may be inevitable within teams, particularly in cases in which differences in function, status, or skill sets dictate differences in the control offered during pro-

cedures. Obviously this situation creates a dilemma for managers in charge of teams in organizations. However, the results of Study 1 offer one practical suggestion: One must turn to other justice criteria to foster a more consistent perception of justice. Even when control must be varied, factors such as accuracy, bias suppression, and correctability can be made constant across team members. Indeed, past research has shown that leaders can be trained on such procedural rules in the interest of fostering positive workplace reactions (e.g., Skarlicki & Latham, 1996, 1997). Such training could allow leaders to more easily foster a consistent level of justice within teams.

Leaders could also track and record that consistency using standardized measures of justice (e.g., Colquitt, 2001; Moorman, 1991). If differences in justice perceptions persist, then leaders should take greater care to explain any differences in treatment that could account for the variation. Past research has shown that explanations can mitigate negative reactions to unfavorable circumstances (e.g., Bies & Shapiro, 1987; Greenberg, 1990; Rousseau & Tijoriwala, 1999). A recent review showed that explanations are particularly effective when the outcome being explained has implications for a person's economic and socioemotional
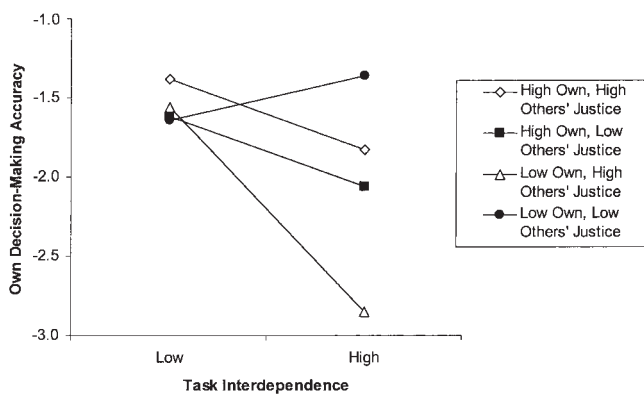

Figure 3. Own × Others' Justice × Interdependence interaction for decision accuracy (Study 2).
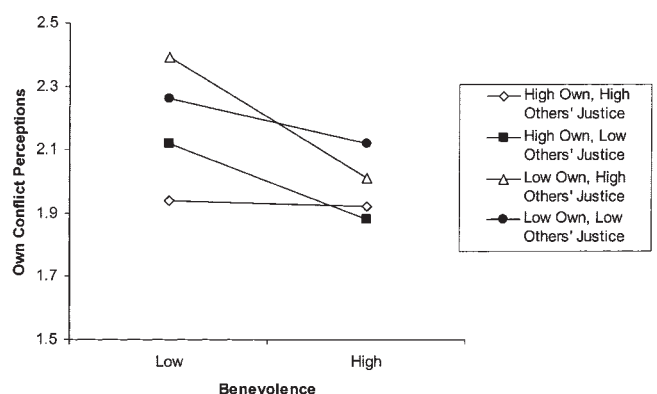

Figure 4. Own × Others' Justice × Benevolence interaction for conflict (Study 2).

well-being (Shaw, Wild, & Colquitt, 2003). Differences in procedural justice clearly hold both economic and socioemotional consequences for team members.

Although the suggestions above are justice focused, team leaders could also turn to the moderators examined in this study. If treatment differences are unavoidable, the negative impact of those differences could be reduced by relaxing the level of task interdependence in the team. This could be accomplished by altering (a) the way the task is defined for the team, (b) the rules or instructions that are given to the team, or (c) the technology and skill composition that characterize the team (Wageman, 2001). This option would be most effective when the level of interdependence outpaces the actual need for collective action. Alternatively, leaders could consider staffing the teams with individuals who are less equity sensitive. Personality measures are a standard component of most organizations' selection, placement, and development systems. Those existing systems could be expanded to include concepts such as equity sensitivity.

Suggestions for Future Research

Providing more specific recommendations for team leaders requires gaining a better understanding of the conceptual differentiation between own and others' justice. With the exception of Study 1, every investigation of the interaction of own and others' justice has manipulated treatment in a laboratory design. What is the relationship between the two constructs likely to be in actual team settings? The results from Study 1 suggest that the two are highly related, as the correlation between them was .69. The strength of this relationship is likely due to the two common causes the constructs share: the same formalized decision-making procedures and the same enactor of those procedures in the team leader.

Several factors may impact the strength of the correlation between own and others' justice. First, different justice dimensions may possess different own–other correlations. Procedural justice is the most systemic of all of the justice dimensions, likely inflating the own–other correlation. However, some procedural variables may be more systemic than others. For example, Leventhal's (1980) accuracy or correctability criteria may exhibit less within-team variation than Thibaut and Walker's (1975) control-based criteria. Moreover, interactional forms of justice may exhibit larger differences within teams. For example, teams may possess cliques or in-groups that cause some members to receive more respectful treatment or to be more "in the know" because of frequent explanations.

Team characteristics could also alter the relationship between own and others' justice. Research examining justice at higher levels of analysis is indirectly relevant to this issue. Naumann and Bennett (2000) examined the relationship between procedural justice climate and attitudes and behaviors in bank branches. Branches that were cohesive and possessed visible leaders tended to exhibit perceptual convergence with respect to justice climate (as evidenced by high within-group agreement or high interrater reliability). Colquitt et al. (2002) showed similar results for unit size and diversity, as large heterogeneous units tend to exhibit less climate convergence. These studies suggest that the relationship between own and others' justice may vary across contexts even though both necessarily share common causes.

Strengths and Limitations

This study possesses a number of strengths. First, the multiple-study format allowed for two different operationalizations of procedural justice and two different operationalizations of task interdependence. In addition, both studies used role performance as the dependent variable rather than the attitudinal outcomes used in past research. Moreover, the setting for Study 2 allowed for the creation of objective measures of both role performance and cooperation.

Of course, these studies have their limitations as well. Although the teams in both studies possessed interdependence, common fate, and collective identity, they lacked the past history and familiarity of teams in organizations. It is therefore important to build on the results presented here by conducting field research in ongoing work teams. Although meta-analyses of the justice literature and other domains have indicated remarkable convergence in findings across lab and field studies (Anderson, Lindsay, & Bushman, 1999; Cohen-Charash & Spector, 2001), external validity can be established only by using several studies with varying methods, settings, and measures (Cook & Campbell, 1979). These studies also failed to include one common operationalization of procedural justice: the fulfillment of Leventhal's (1980) rules for fair procedure. Future research should extend these results by examining the interaction of own and others' levels of accuracy, bias suppression, correctability, or ethicality.

Despite their limitations, these studies serve as an important first step in examining the full complexities of procedural justice in team contexts. The diversity in measures, research designs, and research settings offers some support for the replicability of the predicted interaction effects. It therefore seems clear that team members do not react to decision events on the basis of a tunnel-visioned awareness of only their own justice. Rather, they consider how that justice compares with that of their teammates, exhibiting more positive reactions when treatment is consistent within the team.

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