

High procedural fairness heightens the effect of outcome favorability on self-evaluations: An attributional analysis

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Abstract

Previous research has shown that outcome favorability and procedural fairness often interact to influence employees' work attitudes and behaviors. Moreover, the form of the interaction effect depends upon the dependent variable. Relative to when procedural fairness is low, high procedural fairness: (a) reduces the effect of outcome favorability on employees' appraisals of the system (e.g., organizational commitment), and (b) heightens the effect of outcome favorability on employees' evaluations of themselves (e.g., self-esteem). The present research provided external validity to the latter form of the interaction effect (Studies 1 and 4). We also found that the latter form of the interaction effect was based on people's use of procedural fairness information to make self-attributions for their outcomes (Studies 2 and 3). Moreover, both forms of the interaction effect were obtained in Study 4, suggesting that they are not mutually exclusive. Theoretical and practical implications are discussed.

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1. Introduction

A central tenet of the study of exchange relationships in organizations is that employees are affected by both the outcomes and the processes associated with the exchange. For example, employees' work motivation and organizational commitment are greater when they perceive the outcomes of their exchanges to be more favorable (e.g., Homans, 1961) or fair (e.g., Greenberg, 1996), and when they believe the procedures used by the other party to be more fair (e.g., Lind & Tyler, 1988). These findings thus support the adage that employees' reactions depend not only on *what* was done, but also on *how* things were done.

More interestingly, outcome favorability and procedural fairness also interact with one another to influence

employees' work attitudes and behaviors. On dependent measures assessing people's appraisals of the "system," such as their willingness to support: (a) the decision that was reached, (b) the parties who planned or implemented the decision, and (c) the organization in which the decision was enacted, the interaction effect reveals that the positive relationship between outcome favorability and employee support is reduced when procedural fairness is high rather than low (Mark & Folger, 1984). To state the interaction effect differently, the positive relationship between procedural fairness and employees' support for the system is more pronounced when outcome favorability is low rather than high. This interaction between outcome favorability and procedural fairness is quite robust. It was originally predicted by referent cognitions theory (e.g., Folger, 1986) and demonstrated by Folger and his colleagues (e.g., Folger, Rosenfield, & Robinson, 1983), and it has appeared in more than 40 other studies (for a review, see Brockner & Wiesenfeld, 1996).

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A much smaller number of other studies show a different form of interactive relationship between outcome favorability and procedural fairness. In studies in which the object of evaluation is the self (e.g., self-esteem), the interaction effect shows that high procedural fairness *heightens* the effect of outcome favorability, relative to when procedural fairness is low (Gilliland, 1994; Ployhart, Ryan, & Bennett, 1999; Schroth & Shah, 2000). To state this form of the interaction effect differently, there is more likely to be a positive relationship between procedural fairness and self-esteem when outcomes are favorable rather than unfavorable. Indeed, some studies have shown that in the face of unfavorable outcomes, procedural fairness may actually be *inversely* related to self-evaluations (Schroth & Shah, 2000).

Taken together, the two different forms of interactive relationships between outcome favorability and procedural fairness seem puzzling. Why is it that high procedural fairness (relative to low procedural fairness) both: (1) reduces the positive relationship between outcome favorability and people's support for the system, and (2) heightens the positive relationship between outcome favorability and people's evaluations of themselves? Addressing this question has both theoretical and practical implications. At the theoretical level, the resolution of this apparent paradox may shed light on the process(es) through which procedural fairness influences people's work attitudes and behaviors. At the practical level, it has been suggested that in the face of unfavorable outcomes, managers need to be procedurally fair both to: (1) retain employees' support for the system, and (2) help employees maintain their self-esteem (Lind & Tyler, 1988). However, the juxtaposition of the two different forms of the interaction effect suggests that managers may not always be able to accomplish the latter of these two objectives by being procedurally fair in the face of unfavorable outcomes. That is, when outcomes are unfavorable procedural fairness is far less likely to be positively (and may even be negatively) related to people's self-evaluations.

1.1. Explaining the two forms of the interaction effect

Referent cognitions theory (Folger, 1986) and prior research (Folger et al., 1983; Van den Bos, Bruins, Wilke, & Dronkert, 1999) suggest that the two different forms of the interaction effect reflect an attribution process in which people engage in response to information about the favorability of their outcomes and the procedural fairness of the other party. Much prior theory and research have suggested that people's appraisals of both the system and themselves tend to be more positive when their outcomes are favorable rather than unfavorable (e.g., Lind & Tyler, 1988; Weiner, 1985). However, the extent to which outcome favorability is positively related to people's support for the system as

well as their self-evaluations depends upon their attributions of responsibility for their outcomes. The more that people see the other party as responsible for their outcomes, the more likely it is that the favorability or unfavorability of their outcomes will influence their degree of support for the system (Folger & Cropanzano, 1998; Mark & Folger, 1984). For example, when outcomes are unfavorable people's resentment towards the other party is greater to the extent that they see the other party as responsible for the unfavorable outcomes (Folger, 1986). Furthermore, the more that people see themselves as responsible for their outcomes, the more likely is outcome favorability to be positively related to their evaluations of themselves (e.g., Weiner, 1985).

Information about the other party's procedural fairness, in turn, influences people's attributions of responsibility for their outcomes. People are more apt to see the other party as responsible for their outcomes when the other party is procedurally unfair rather than fair. Moreover, they are more likely to see themselves as responsible for their outcomes when the other party is procedurally fair rather than unfair. Prevailing ethical standards and social norms typically mandate exchange partners to behave in procedurally fair ways towards one another. Behavior that violates such standards or norms tends to be attributed to something about the actor (Jones & Davis, 1965). This reasoning suggests that people will hold the other party to be more responsible for his/her behavior—and, by extension, more responsible for the outcomes of the exchange—when the other party exhibits lower procedural fairness. For example, if employees failed to receive a desired promotion due to the other party's use of unfair procedures, then employees would see the other party as responsible for their failure to be promoted.

To state the above reasoning differently, people are more likely to externalize the causes of their outcomes when the other party is procedurally unfair. They do not see themselves as responsible for their outcomes; rather, they attribute their outcomes to the (unfair procedures of the) other party. In contrast, when procedural fairness is high people cannot as easily externalize the causes of their outcomes. Outcomes associated with fair procedures are likely to be viewed as deserved, that is, arrived at "fairly and squarely" (Heuer, Blumenthal, Douglas, & Weinblatt, 1999). Judgments of deservingness, in turn, are closely linked to perceptions of personal responsibility. When people believe that they received the outcomes they deserved they are in essence saying that there was something about themselves (e.g., their personality, ability, or behavior) that was responsible for their outcomes. Indeed, the results of recent studies show that people see themselves as more personally responsible for their outcomes when the other party is more procedurally fair (Leung, Su, & Morris, 2001; Van den Bos et al., 1999).

The above attributional analysis may help to explain why greater procedural fairness may both reduce the positive relationship between outcome favorability and people's support for the system, and heighten the positive relationship between outcome favorability and people's evaluations of themselves. The more that procedures are fair: (a) the less likely are people to see the other party as responsible for their outcomes, thereby reducing the positive relationship between outcome favorability and their support for the system, and (b) the more likely are people to see themselves as responsible for their outcomes, thereby heightening the positive relationship between outcome favorability and their evaluations of themselves.

This is not to suggest that attributions of responsibility to the other party and oneself necessarily reflect opposite sides of the same continuum (in which the more the other party is seen as responsible the less the personal responsibility, and vice versa). Empirical research shows that attributions of responsibility to the self and to another party are not always inversely related; rather, the two judgments may be independent (e.g., Amabile, Hill, Hennessey, & Tighe, 1994). Thus, people may use procedural fairness information to make *separate* inferences about the other party's responsibility and their personal responsibility for their outcomes. For example, if factors other than the self and the other party could have caused the outcome (such as organizational conditions, or other factors not under the control of the self or the other party), then attributions to the self and the other party need not be inversely related.

1.2. *The present studies*

A considerable amount of theory and research already has supported the notion that fair procedures lessen people's perceptions of the other party's responsibility for their outcomes, thereby reducing the positive relationship between outcome favorability and people's support for the system (Brockner & Wiesenfeld, 1996; Folger et al., 1983). However, the interactive effect of outcome favorability and procedural fairness on people's self-evaluations has not been studied nearly as much, and therefore is not as well understood. The present studies are designed to address three important matters primarily (but not exclusively) pertaining to the interactive effect of outcome favorability and procedural fairness on self-evaluations. First, whereas this interactive relationship has been found in a number of studies (Gilliland, 1994; Ployhart et al., 1999; Schroth & Shah, 2000), it has never been tested on a non-student sample in an actual work organization. Thus, one of our purposes is to evaluate the external validity of the tendency of high procedural fairness to heighten the positive relationship between outcome favorability and people's self-evaluations (Studies 1 and 4).

Second, and of greater theoretical significance, the present research is designed to evaluate further the attributional explanation of the interactive effect of outcome favorability and procedural fairness on people's self-evaluations (Mark & Folger, 1984). Previous findings are consistent with the attributional explanation, showing that: (a) people see themselves as more personally responsible for their outcomes when procedures are fair rather than unfair (e.g., Van den Bos et al., 1999), and (b) the more that people see themselves as responsible for their outcomes, the more likely is outcome favorability to be positively related to their self-evaluations (e.g., Weiner, 1985). Integrating these two points, researchers who have shown that higher procedural fairness enhances the positive relationship between outcome favorability and people's self-evaluations have speculated that people's self-attributions account for the findings (e.g., Schroth & Shah, 2000). However, the self-attribution explanation of the interactive effect of outcome favorability and procedural fairness on self-evaluations has never been fully tested. The study that comes closest to evaluating the self-attribution explanation (Van den Bos et al., 1999, Study 3) did not vary outcome favorability; rather, all participants in that study experienced an unfavorable outcome. Thus, the second goal of the present research is to evaluate whether people's tendencies to see themselves as more personally responsible for their outcomes when procedures are more fair may account for the interactive effect of outcome favorability and procedural fairness on their self-evaluations (Studies 2 and 3).

The third purpose of the present research is to evaluate whether the two different forms of interactive relationship between outcome favorability and procedural fairness may be found simultaneously. Many studies have shown that high procedural fairness reduces the effect of outcome favorability on people's appraisals of the system, and a smaller number of studies show that high procedural fairness heightens the effect of outcome favorability on people's self-evaluations. However, these effects usually have been shown in separate settings (see Ployhart et al., 1999, for an exception). For both theoretical as well as methodological reasons, it is important to evaluate whether the two interaction effects manifest themselves in the same research context. Study 4 evaluates this possibility.

2. Study 1

Most research showing that high procedural fairness heightens the positive relationship between outcome favorability and people's self-evaluations has been conducted under controlled laboratory conditions. Even the few field studies that have been conducted (e.g., Ployhart and Ryan, 1997; Schroth & Shah, 2000, Study 2) have

used college students as participants. No study has evaluated whether the tendency of high procedural fairness to heighten the positive relationship between outcome favorability and people's self-evaluations generalizes to a non-student sample in an actual work organization.

Study 1 was designed to redress this deficiency. Participants consisted of organization members who were asked to think about an interaction they had experienced with a fellow employee. Independent variables included the perceived favorability of the outcomes received from the interaction and the procedural fairness of the other party during the interaction. The dependent variable was self-esteem. We predicted an interaction between outcome favorability and procedural fairness; that is, the positive relationship between outcome favorability and self-esteem was expected to be stronger when procedural fairness was high rather than low.

2.1. Method

2.1.1. Participants

Participants consisted of 276 police officers in a major metropolitan area in the northeastern part of the US. With the support of the city's Police Department, we approached participants at the beginning of a mandatory training session and asked them to complete a survey (described below). While participation was voluntary, fully 90% of those approached took part in the study. Approximately 90% of the participants were male. Their average age was 33.44 years ($SD = 6.50$), and their average number of years as a police officer was 9.06 ($SD = 5.81$). In exchange for completing the survey a small contribution was made to a charitable organization of the participants' choosing.

2.1.2. Procedure

The survey was described as being designed "to obtain your impressions of your behavior and the behavior of another police officer in a recent, on-duty encounter." Prior to indicating their impressions participants wrote responses to a number of questions designed to prime their memories of the on-duty interaction they had with another police officer, such as why it took place, whom it was with, what happened, and how they generally felt about it. They then completed a lengthy survey, embedded in which were the independent variables of outcome favorability and procedural fairness and the dependent variable of self-esteem.

2.1.3. Measures

Following each item for all measures was a nine-point rating scale, with endpoints labeled "strongly disagree" (1) and "strongly agree" (9).

Outcome favorability. Five items were used to assess participants' perceptions of the outcomes of the encounter. Three of the items referred to the extent to which the

outcome was favorable (e.g., "The outcome of this encounter benefited me"). The other two items referred to the fairness of the outcome (e.g., "The outcome was fair"). While outcome favorability and outcome fairness are conceptually distinct, they tend to be highly related to each other (e.g., Lind & Tyler, 1988). Such was the case in the present study. A subscale based upon the average of the three items measuring outcome favorability was strongly related to a subscale based upon the average of the two items measuring outcome fairness, $r(274) = .75$, $p < .001$. Moreover, coefficient α for the five items was .85. Participants' responses to the five items were averaged into an overall index.

Procedural fairness. Seven items that have been shown to influence people's beliefs about procedural fairness in interpersonal encounters were used. Sample items were, "He/she gave me ample opportunity to say what was on my mind," "He/she treated me in a neutral manner," and "He/she listened carefully to what I had to say." Coefficient α was .85. Responses were averaged into an index.

Self-esteem. The 10-item Rosenberg (1965) scale was used to measure self-esteem (e.g., "On the whole, I am satisfied with myself."). Coefficient α was .87. Responses were averaged into an index.

2.2. Results and discussion

Summary statistics are provided in Table 1.

2.2.1. Test of hypothesis

The hypothesis was examined with a multiple regression analysis. Predictor terms included outcome favorability, procedural fairness, and, of greatest importance, the interaction between the two. As shown in Table 2, the interaction effect was significant ($p < .05$). The nature of the interaction was illustrated based on procedures recommended by Aiken and West (1991), in which we examined the relationship between outcome favorability and self-esteem at a high level of procedural fairness (1 SD above the mean) and at a low level of procedural fairness (1 SD below the mean). As can be seen in Fig. 1, the nature of the interaction was as predicted. Moreover, simple slope analyses revealed that the relationship between outcome favorability and self-esteem was positive and significant when procedural fairness was high ($t = 2.62$, $p < .02$), whereas the relationship between outcome favorability and self-esteem was non-significant ($t < 1$) when procedural fairness was low.

Subsidiary analysis. Some of the outcome items in Study 1 referred to favorability whereas others reflected fairness. Whereas the two sorts of items were strongly related to one another, the conceptual distinction between outcome favorability and outcome fairness suggests that it would be useful to evaluate whether outcome favorability and outcome fairness interacted

Table 1
Summary statistics (Study 1)

Variable	Range	<i>M</i>	<i>SD</i>	1	2	3
1. Outcome favorability	1–9	5.31	2.16	(.85)		
2. Procedural fairness	1–9	5.23	2.19	.49**	(.80)	
3. Self-esteem	1–9	7.94	1.25	.11*	.04	(.87)

Note. Coefficient *zs* are in parentheses.
* $p < .06$.
** $p < .01$.

Table 2
Multiple regression (Study 1)

Predictor variables	Dependent variable: Self-esteem		
	<i>B</i> ^a	<i>F</i>	<i>p</i>
Outcome favorability	.09	4.36	.05
Procedural fairness	.00	.00	n.s.
Outcome favorability × procedural fairness	.03	4.24	.05
Overall $F(3, 272) = 2.50$, $p < .06$; total $R^2 = .03$			

^a Unstandardized coefficients are reported here and in all subsequent regression analyses.

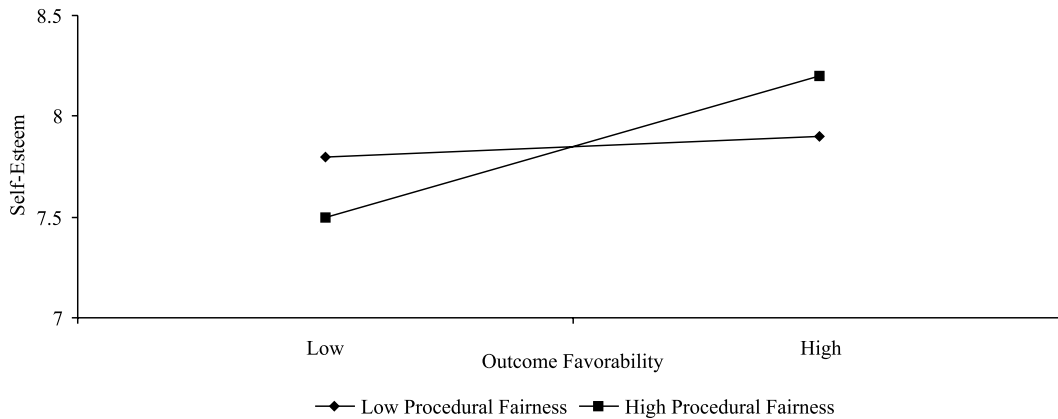


Fig. 1. Effects of outcome favorability and procedural fairness on self-esteem (Study 1).

similarly with procedural fairness to influence participants' self-esteem. Specifically, we performed a multiple regression analysis in which the predictor terms were procedural fairness, a subscale consisting of the three items measuring outcome favorability, a subscale based on the two items measuring outcome fairness, and the interaction between procedural fairness with each of the subscales for outcome favorability and outcome fairness. We then examined whether the total R^2 was greater when outcome favorability and outcome fairness were combined into an index rather than treated as separate subscales. If outcome favorability and outcome fairness interacted similarly with procedural fairness to influence self-esteem, then the total R^2 should be no greater when the two were treated as separate subscales than when

they were combined into an index. As can be seen in Table 2, the total R^2 in which the subscales were combined into an index was .03; the total R^2 in which the subscales were kept separate also was .03.

The results of Study 1 provide external validity to previous studies that have examined the effects of outcome favorability and procedural fairness on people's self-evaluations. Whereas prior research (e.g., Gilliland, 1994; Ployhart et al., 1999; Schroth & Shah, 2000) has shown that high procedural fairness heightens the positive relationship between outcome favorability and self-evaluations (relative to when procedural fairness is low), none of these studies evaluated the interactive relationship on a non-student sample in the context of an actual work organization.

3. Study 2

Study 2 is designed to shed light on the attributional mechanism presumed to account for the interactive effect of outcome favorability and procedural fairness on self-evaluations. Whereas previous research has shown that: (1) procedural fairness is positively related to people's tendencies to make self-attributions for their outcomes (Van den Bos et al., 1999), and (2) outcomes for which people make more self-attributions have more of an influence on their self-evaluations (Weiner, 1985), no study has examined the effect of procedural fairness on people's self-attributions for their outcomes while *simultaneously* evaluating the interactive effect of procedural fairness and outcome favorability on their self-evaluations. As a result, further evidence is needed to link the relationship between procedural fairness and self-attributions for outcomes to the interactive effect of outcome favorability and procedural fairness on people's self-evaluations. The attributional explanation of the interactive effect of outcome favorability and procedural fairness on self-evaluations would be more compelling if, in the same research context, the linkage between procedural fairness and self-attributions for outcomes were established, *along with* the tendency of outcome favorability to be more positively related to self-evaluations when procedural fairness was high rather than low. This was the major purpose of Study 2.

Participants in Study 2 completed a battery of tests designed to measure their managerial potential. Independent variables consisted of outcome favorability and procedural fairness. Half of the participants were told that they had high managerial potential (favorable outcome condition) and half were told that they did not have high managerial potential (unfavorable outcome condition). Moreover, participants' perceptions of the fairness of the procedures used to make judgments of their managerial potential served as an additional independent variable. The main dependent variable was participants' self-evaluations. To examine the mediating role played by participants' self-attributions for their outcomes, we also assessed the extent to which they attributed their outcomes to themselves.

Hypothesis 1. Outcome favorability and procedural fairness will interact to influence participants' self-evaluations. The tendency for outcome favorability to be positively related to self-evaluations will be greater when procedural fairness is high rather than low.

Hypothesis 2. Outcome favorability and participants' self-attributions for their outcomes will interact to influence their self-evaluations. The tendency for outcome favorability to be positively related to self-evaluations will be greater when people make more self-attributions for their outcomes.

Hypothesis 3. It is not procedural fairness per se, but rather the self-attributions for outcomes elicited by

procedural fairness, that will interact with outcome favorability to influence their self-evaluations. Said differently, the interactive relationship between outcome favorability and procedural fairness set forth in Hypothesis 1 will be accounted for (mediated by) the interactive relationship between outcome favorability and self-attributions set forth in Hypothesis 2.

3.1. Method

3.1.1. Participants

The participants were 111 undergraduate students from a private university in the northeastern part of the US. Students received extra course credit for their participation.

3.1.2. Procedure

The procedure was based on the methodology used by Schroth and Shah (2000, Studies 1 & 3). The experimenter told participants that she was working with the business school to evaluate an individual's managerial potential. Participants were introduced by the experimenter to a female confederate who pretended to be a recruiter from a local company. They were then asked to work for approximately 30 min on a managerial assessment test, which consisted of 10 separate sub-tasks (e.g., deciding how to address a worker's drug problem, and prioritizing the agenda for a typical workday). Participants were told that the recruiter would evaluate their performance on the assessment test and provide them with feedback. After the experiment ended participants were thoroughly debriefed.

3.1.3. Independent variables

Outcome favorability. At the end of the 30-min test period all participants were provided written feedback about their test performance along with an assessment from the recruiter about whether they would have been hired by her company. Participants were randomly assigned to receive either favorable or unfavorable outcome feedback. In the favorable outcome condition, participants received positive written feedback on the test (e.g., "High Managerial Potential") and they were told by the recruiter that they would have been hired for a job at the recruiter's company. In the unfavorable outcome condition, participants received negative written feedback (e.g., "Low Managerial Potential") and they were told by the recruiter that they would not have been hired for a job at the recruiter's company.

Procedural fairness. A manipulation of procedural fairness transpired after the outcome favorability induction. In the high and low procedural fairness conditions participants were given a sheet that described the methods the recruiter used to evaluate their managerial potential. In the high procedural fairness condition they were told that: (a) all participants were judged on the

same criteria (high consistency); all exams were scored as the sum of all correctly answered questions divided by the total number of exam questions, (b) the criteria were objective (their performance on the managerial potential task), (c) their performance on all of the sub-tasks was used to judge their potential (high information accuracy), and (d) they clearly had been evaluated by the recruiter (cf. Van den Bos et al., 1999, Study 3).

In the low procedural fairness condition participants were told that: (a) the evaluation standards were inconsistent (in part, their score was based on the level of performance given their reputation as a student), (b) the criteria included a subjective element (the experimenter's assessment of their attitude towards the exam, based on their dress, appearance, and personal demeanor), (c) their performance on only two of the ten sub-tasks was used to judge their potential, and (d) it was unclear whether the evaluations were made by the recruiter or by the experimenter.

In the control condition, participants were not given any information about the procedures used to evaluate their managerial potential.

3.1.4. Measures

Following the procedural fairness manipulation all participants were given a questionnaire that included manipulation checks and the dependent variable. Seven-point rating scales followed each question. The outcome favorability manipulation check was, "How would you rate your performance on the managerial assessment exam?" Endpoints were "very poor" (1) and "very good" (7). The procedural fairness manipulation checks consisted of three items, such as "How fair were the methods used to determine how well you performed on the managerial assessment exam?" Responses to these three items were internally consistent (coefficient $\alpha = .85$), and averaged into an index.

Dependent variable. The dependent variable was adapted from Heatherton and Polivy's (1991) state self-esteem scale. State self-esteem refers to how people are feeling about themselves at a particular moment. The performance-based measures from the Heatherton and Polivy instrument were deemed to be most relevant for present purposes. Four items were used (e.g., "I feel confident about my abilities," and "I feel like I'm not doing well" (reverse scored)). Five-point rating scales were used with endpoints labeled "not at all" (1) and "extremely" (5). Coefficient α was .83. Participants' responses were averaged into an index.

Self-attributions for outcomes. The questionnaire also included measures designed to assess the extent to which participants made self-attributions for their performance outcomes. They were asked to indicate how much the following factors influenced their performance on the managerial assessment exam: (a) how hard I tried, and (b) my ability. Scale endpoints were "had no in-

fluence on my performance" (1) and "had a great deal of influence on my performance" (7). Participants' responses to these two measures were significantly related to each other, $r(109) = .50$, $p < .001$, and averaged into an index.

3.2. Results

3.2.1. Manipulation checks

Outcome favorability. A 2×3 (outcome favorability \times procedural fairness) analysis of variance (ANOVA) yielded only a highly significant main effect of outcome favorability, $F(1, 104) = 58.78$, $p < .001$. Participants felt they had performed better in the favorable outcome condition than in the unfavorable outcome condition ($M_s = 4.98$ vs. 2.46, respectively).

Procedural fairness. Contrary to expectation, the ANOVA did not reveal a significant main effect of the procedural fairness manipulation. Participants did not feel that the procedures were differentially fair in the high procedural fairness, low procedural fairness, and control conditions, $F(2, 102) = .01$ ($M_s = 4.24$, 4.29, 4.49, respectively). This result was surprising, in that the manipulation was based on one that had been successfully employed in two separate studies by Schroth and Shah (2000).

Given that the procedural fairness manipulation did not have its intended effect, we operationalized procedural fairness in the ensuing analyses on the basis of participants' *perceptions* of procedural fairness (i.e., their responses to the three-item measure of procedural fairness), rather than the procedural fairness condition to which they had been assigned.

3.2.2. Tests of hypotheses

All hypotheses were tested with the use of multiple regressions, in which all relevant main and interaction effects were entered simultaneously.

Hypothesis 1. As can be seen Table 3, the interaction between outcome favorability and procedural fairness was significant on the measure of self-esteem ($p < .05$). To illustrate the nature of the interaction effect, we followed the procedures recommended by Aiken and West (1991) in which the relationship between outcome favorability and self-esteem was examined at a high level of procedural fairness (1 *SD* above the mean) and at a low level of procedural fairness (1 *SD* below the mean). Fig. 2 shows that the interactive pattern took the predicted form. When procedural fairness was high, outcome favorability and self-esteem were positively related (simple slope $t = 2.54$, $p < .02$). When procedural fairness was low, outcome favorability and self-esteem were not significantly related (simple slope $t = .24$, $p > .50$).

Hypothesis 2. Table 4 shows that the interaction between outcome favorability and self-attributions was significant at the .01 level. To illustrate further the

Table 3
Multiple regression involving procedural fairness (Study 2)

Predictor variables	Dependent variable: Self-esteem		
	<i>B</i>	<i>F</i>	<i>p</i>
Outcome favorability	-1.26	2.10	n.s.
Procedural fairness	.02	.02	n.s.
Outcome favorability × procedural fairness	.40	4.21	.05
Overall $F(3, 104) = 6.06$, $p < .01$; total $R^2 = .15$			

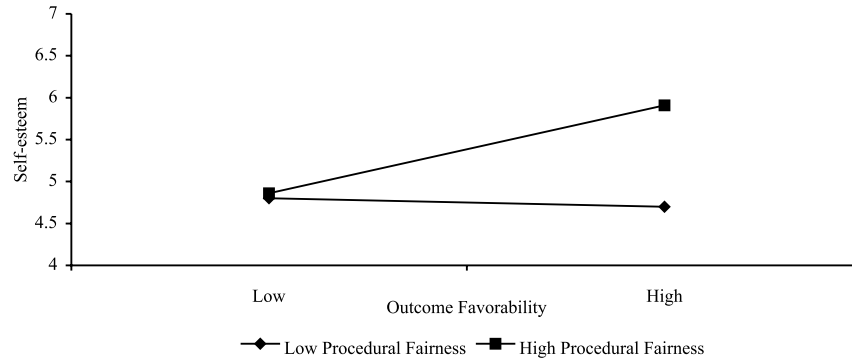


Fig. 2. Effects of outcome favorability and procedural fairness on self-esteem (Study 2).

Table 4
Multiple regression involving self-attributions (Study 2)

Predictor variables	Dependent variable: Self-esteem		
	<i>B</i>	<i>F</i>	<i>p</i>
Outcome favorability	-.1.60	4.12	.05
Self-attributions	-.16	1.64	n.s.
Outcome favorability × self-attributions	.95	8.93	.01
Overall $F(3, 107) = 6.54$, $p < .001$; total $R^2 = .16$			

nature of the interaction effect, we examined the relationship between outcome favorability and self-esteem at high and low levels of self-attributions (1 SD above and below the mean, respectively). As predicted, and as can be seen in Fig. 3, the relationship between outcome

favorability and self-esteem was positive when self-attributions were high (simple slope $t = 3.84, p < .001$). In sharp contrast, outcome favorability and self-esteem were not significantly related when self-attributions were low (simple slope $t = .32, p > .50$).

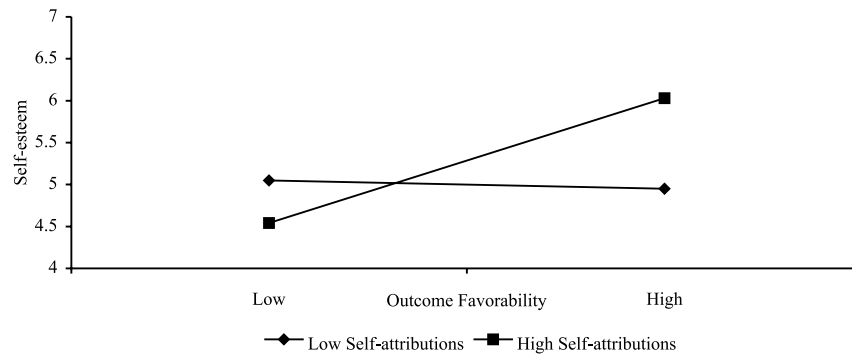


Fig. 3. Effects of outcome favorability and self-attributions on self-esteem (Study 2).

Hypothesis 3. Hypothesis 3 posited that it is not procedural fairness per se that interacts with outcome favorability to influence participants' self-evaluations. Rather, it is the self-attributions for outcomes (elicited by procedural fairness) that interact with outcome favorability to influence participants' self-evaluations. To state this reasoning operationally, the interaction between outcome favorability and procedural fairness was predicted to be accounted for (or mediated by) the interaction between outcome favorability and self-attributions.

Hypothesis 3 was tested based on the mediational principles described by Baron and Kenny (1986). First, we evaluated whether procedural fairness (the predictor variable) and self-attributions for outcomes (the mediating variable) were related to each other. Results indeed showed that the two were significantly related, $r(109) = .52, p < .001$. Tests of Hypotheses 1 and 2 have already shown that each of the predictor and mediating variables (in interaction with outcome favorability) were related to the dependent variable of self-esteem. Finally, we evaluated whether the significance of the interaction between outcome favorability and procedural fairness was reduced when we controlled for the interaction between outcome favorability and self-attributions for outcomes.

Specifically, we entered the main effects of outcome favorability (as a dummy variable), procedural fairness, and self-attributions for outcomes, and the interactions between: (a) outcome favorability and procedural fairness, and (b) outcome favorability and self-attributions for outcomes. If the effect of procedural fairness was mediated by self-attributions for outcomes, then: (a) the significance of the former interaction should be considerably reduced, and (b) the latter interaction should remain significant. This is precisely what occurred. The interaction between outcome favorability and procedural fairness became trivial, $F(1, 102) = .14, p > .50$; its nature is revealed in Fig. 4. However, the interaction between outcome favorability and self-attributions for outcomes remained significant, $F(1, 102) = 9.07, p < .01$,

and took the same general form as the one reported previously (see Fig. 5). Simple slope analyses based on the results shown in Fig. 5 revealed a positive relationship between outcome favorability and self-esteem when self attributions for outcomes were relatively high ($t = 3.43, p < .001$), and no significant relationship between outcome favorability and self-esteem when self attributions for outcomes were relatively low ($t = 1.02, p > .30$).

3.3. Discussion

The results of Study 2 suggest that people use procedural fairness information to make self-attributions for their outcomes, which, in turn, helps to explain the interactive effect of procedural fairness and outcome favorability on their self-evaluations. Consistent with prior theory and research (e.g., Van den Bos et al., 1999), people's perceptions of procedural fairness were positively related to their tendency to see themselves (i.e., their ability and effort) as responsible for their outcomes. Furthermore, the mediational analysis (test of Hypothesis 3) showed that it was not participants' perceptions of procedural fairness per se, but rather, their self-attributions related to procedural fairness, that interacted with outcome favorability to influence their self-evaluations. Whereas others have speculated that people's self-attributions for their outcomes underlie the interactive effect of outcome favorability and procedural fairness on self-evaluations (e.g., Schroth & Shah, 2000), Study 2 provides direct empirical support for this speculation.

An important limitation of Study 2 is that the procedural fairness manipulation did not "take." Consequently, the internal validity of the findings may have been compromised in that procedural fairness was operationalized in the main analyses on the basis of participants' perceptions of procedural fairness, rather than the experimental condition to which they had been assigned. However, given the nature of the results of the mediation analysis, we believe that internal validity was not compromised entirely. That is, the test of

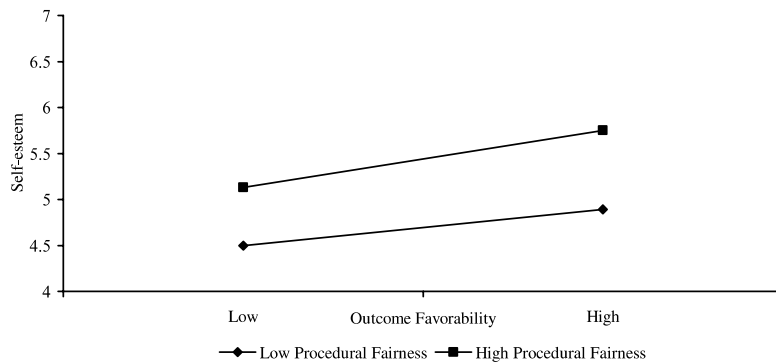


Fig. 4. Effects of outcome favorability and procedural fairness on self-esteem in presence of outcome favorability \times self-attributions interaction (Study 2).

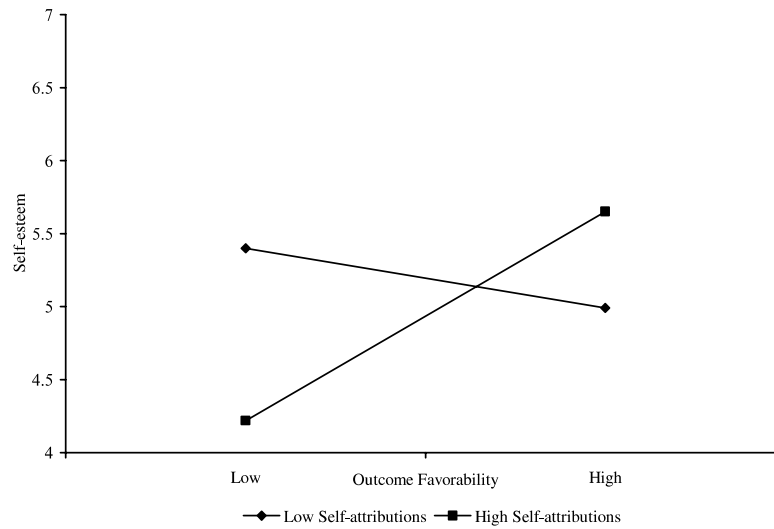


Fig. 5. Effects of outcome favorability and self-attributions on self-esteem in presence of outcome favorability \times procedural fairness interaction (Study 2).

Hypothesis 1 showed that the positive relationship between outcome favorability and self-evaluations was greater when procedural fairness perceptions were high rather than low. The test of Hypothesis 3, however, showed that this interactive effect of outcome favorability and procedural fairness became trivial when the interactive effect of outcome favorability and self-attributions on self-evaluations was included in the same regression equation; moreover, the interaction between outcome favorability and self-attributions continued to be significant. In short, the results of the mediational analysis are consistent with the notion that it was the causal effect of procedural fairness (on self-attributions) that interacted with outcome favorability to influence participants' self-evaluations.

4. Study 3

Nevertheless, given that there was some uncertainty about the internal validity of the results of Study 2, additional evidence is needed to show that people's self-attributions for their outcomes underlie the interactive effect of outcome favorability and procedural fairness on self-evaluations. Study 3 tested the self-attribution explanation with a different investigative strategy than that used in Study 2. An important assumption of the self-attribution explanation is that the factor or factors used to comprise procedural fairness are perceived to have a causal influence on outcomes. Said differently, people are unlikely to make self-attributions for their outcomes when procedural fairness is high when the factor comprising procedural fairness has relatively little causal impact on outcomes.

It is important to surface this underlying assumption of the self-attribution explanation, because the various components of procedural fairness (hereafter referred to as procedural elements) differ in how much they causally affect the outcomes of a decision (Greenberg, 1993). Procedural elements pertaining to the structure of a decision generally have a causal effect on the outcomes. For example, it is reasonable for people to believe that their outcomes could have been determined by such structural aspects as whether they were allowed to have input into the decision making process (Lind & Tyler, 1988; Thibaut & Walker, 1975), or whether the decisions were made on the basis of accurate information (Leventhal, Karuza, & Fry, 1980).

Other procedural elements have less of a causal impact on outcomes. Consider the construct of interactional justice (Bies, 1987), which refers to the interpersonal behavior of the parties responsible for implementing a decision. An exemplar of interactional justice is whether authorities treated the affected parties with dignity and respect during the implementation of the decision. Although the extent to which people are treated with dignity and respect affects their perceptions of fairness, such interpersonal treatment does not cause the outcomes of the decision; it merely *accompanies* the outcomes. Consequently, people should be less apt to perceive their outcomes to be causally determined by the interpersonal behavior of the decision implementers (e.g., whether the implementers treated them with dignity and respect) than by the structural aspects of the decision making process (e.g., whether the decision was based upon accurate information).

In short, if people use procedural fairness information to make self-attributions for their outcomes, they

should do so more in response to procedural elements that are, in fact, causally linked to their outcomes. This reasoning suggests that procedural elements that have more of a causal effect on outcomes should be more likely to moderate the relationship between outcome favorability and self-evaluations, relative to procedural elements that are less causally related to the outcomes. For example, the tendency for outcome favorability to be more positively related to self-evaluations when procedural fairness is high should be stronger when the procedural element consists of information accuracy rather than interactional justice.

Study 3 was designed to test this hypothesis. A vignette methodology was used, in which participants were asked to imagine that they were the focal person who had applied for a job. Three independent variables were included in the research design: (a) outcome favorability, (b) procedural fairness, and (c) type of procedural element. Half of the participants were told that they were hired for the job (favorable outcome condition) whereas half were not (unfavorable outcome condition). Moreover, half were led to believe that the procedures were fair whereas the other half were not.

Finally, the type of procedural element was designed to vary the extent to which the procedural element was causally linked to their outcomes. The procedural element varied for half of the participants was intended to be more causally linked to their outcomes. Specifically, we manipulated whether participants believed that the decision to hire them or not was based on accurate information; some people were told that the information was accurate whereas others were told that the information was not accurate. In other words, participants for whom information accuracy was manipulated were led to believe that their outcome resulted from the procedure, in half the cases fairly so and in the other half of the cases unfairly so.

The procedural element varied for the other half of the participants was intended to be less causally linked to their outcomes. Specifically, interactional justice was varied; some people were told that they had been treated with dignity and respect during the implementation of the decision, whereas others were led to believe that they had not been treated with dignity and respect during the implementation of the decision. In other words, participants for whom interactional justice was varied received information about procedural fairness that had less of a causal influence on their outcomes, relative to those for whom information accuracy was varied.

Once again, the dependent variable was state self-esteem. Among those participants for whom information accuracy was varied, we expected outcome favorability to interact with the procedural element to influence self-esteem. That is, outcome favorability should be more positively related to self-esteem when the procedural element of information accuracy is high

rather than low. Among those participants for whom interactional justice was varied, there should be little or no interactive relationship between outcome favorability and the procedural element of interactional justice.¹

4.1. Method

4.1.1. Participants

Participants were 240 undergraduate students from a private southern university in the United States. They were recruited from introductory psychology and business classes and received extra course credit for their participation.

4.1.2. Design and procedure

A $2 \times 2 \times 2$ factorial design was implemented. The independent variables were outcome favorability (favorable or unfavorable), procedural fairness (high or low), and the type of procedural element that was varied (information accuracy or interactional justice).

Participants read a vignette in which they were asked to imagine that they were the focal person who had applied for a job. Based on a procedure used in previous research (Vermunt, Van der Kloot, & Van der Meer, 1993), the vignette began as follows:

You have written an application letter to apply for a job presented in an advertisement. You have been invited for an interview, and have appeared before a committee.

Some time later, candidates received a letter telling them whether they were hired or not. This letter also presented reasons pertaining to this decision.

Independent variables. Outcome favorability information appeared next in the vignette. In the favorable outcome condition participants were told that they had been hired for the job, whereas in the unfavorable outcome condition they were told that they had not been hired for the job.

Procedural fairness information immediately followed the outcome manipulation. Information accuracy

¹ It could be argued that participants for whom interactional justice was varied could still use information about interactional justice to make inferences about the causal effect of procedures on outcomes. Fairness heuristic theory (e.g., Van den Bos, 2001) suggests that when information about one source of fairness is lacking people will use the fairness information that is available to make inferences about the source that is lacking. For example, people could use interactional justice information to make inferences about those aspects of procedures that are more causally linked to outcomes. Thus, if interactional justice is perceived to be high rather than low, people may infer that information accuracy also was high rather than low. Note, however, that this tendency would *reduce* the difference between the manipulations of information accuracy and interactional justice, thereby making the test of the hypothesis conservative.

was manipulated for half of the participants. In the high accuracy condition the vignette read:

You believe that the committee used correctly designed and well-implemented interviewing methods. Therefore, you believe that the committee had the most possible accurate impression of you as a candidate.

In contrast, those in the low accuracy condition were told:

You believe that the committee used incorrectly designed and poorly implemented interviewing methods. Therefore, you believe that the committee had a very inaccurate impression of you as a candidate.

Interactional justice was manipulated for the remaining half of the participants. One group was told that “the committee’s letter indicated the decision (about whether to hire you) in a respectful and sincere manner that treated you with dignity” (high interactional justice), while the other group was told that “the committee’s letter indicated the decision in a disrespectful and insincere manner that did not treat you with dignity” (low interactional fairness).²

The Heatherton and Polivy (1991) measure of performance-based state self-esteem served as the dependent variable (coefficient $\alpha = .82$).

4.2. Results and discussion

A three-factor analysis of variance was conducted on performance-based state self-esteem. There was a sizable main effect of outcome favorability, $F(1, 232) = 63.77$, $p < .001$, such that participants evaluated themselves more positively when they were offered the job ($M = 4.09$) relative to when they were not ($M = 3.38$). The main effect of procedural fairness, while considerably smaller, was significant as well, $F(1, 232) = 5.15$, $p < .05$; self-evaluations were more favorable when procedural fairness was high ($M = 3.82$) rather than low ($M = 3.64$). The two-way interaction between outcome favorability and procedural fairness also was significant, $F(1, 232) = 10.60$, $p < .001$. As in Studies 1 and 2, outcome favorability was more positively related to self-esteem when procedural fairness was high ($M_s = 4.33$

vs. 3.34, in the favorable and unfavorable outcome conditions, respectively), rather than low ($M_s = 3.85$ vs. 3.42, in the favorable and unfavorable outcome conditions, respectively).

Further insight into the nature of the interaction between outcome favorability and procedural fairness may be gleaned by examining the results when the procedural element consisted of information accuracy versus interactional justice. As can be seen in Table 5, when the procedural element was information accuracy there was a marked tendency for outcome favorability to be more positively related to self-esteem when procedural fairness was high rather than low. In fact, the simple two-way interaction between outcome favorability and procedural fairness was significant in the information accuracy condition, $F(1, 232) = 12.27$, $p < .001$. Table 5 shows a different pattern of results when the procedural element consisted of interactional justice. In fact, the simple interaction between outcome favorability and procedural fairness in this condition was trivial, $F(1, 232) = .90$.

The results of Study 3 are consistent with the self-attribution explanation of why outcome favorability has more of an influence on self-evaluations when procedural fairness is relatively high. When the procedural information was more causally related to the outcome of the job search process (i.e., in the information accuracy condition), high procedural fairness heightened the positive relationship between outcome favorability and self-evaluations, relative to when procedural fairness was low. When the procedural fairness information had less of a causal influence on the outcome (i.e., in the interactional justice condition), however, outcome favorability and procedural fairness did not interact to influence participants’ self-evaluations.

Taken together, the results of Studies 2 and 3 help to explain why outcome favorability has more of an effect on self-evaluations when procedural fairness is relatively high. Prior studies have shown that high procedural fairness leads people to make more self-attributions for their outcomes, relative to when procedural fairness is low (e.g., Van den Bos et al., 1999). Moreover, prior theory and research have shown that there is more of a positive relationship between outcome favorability and people’s self-evaluations when they see themselves as

Table 5
Performance-based state self-esteem as a function of type of procedural element, procedural fairness, and outcome favorability (Study 3)

Type of procedural element	Procedural fairness	Outcome favorability	
		Favorable	Unfavorable
Information accuracy	High	4.38	3.28
	Low	3.77	3.51
Interactional justice	High	4.28	3.40
	Low	3.92	3.34

² It is important to emphasize that whereas both information accuracy and interactional justice were varied in Study 3, in no instance did participants receive information about both of these elements of procedural justice. That is, *for half of the participants*, information accuracy was varied; some were informed that information accuracy was high whereas some were led to believe that it was low. *For the remaining half of the participants*, interactional justice was varied; some were informed that interactional justice was high whereas some were led to believe that it was low.

more personally responsible for their outcomes (Weiner, 1985). However, Studies 2 and 3 are the first to integrate these previous findings in the same research settings, and thereby show that it is the self-attributions elicited by procedural fairness, and not procedural fairness per se, that interact with outcome favorability to influence people's self-evaluations.

Moreover, Studies 2 and 3 show support for the self-attribution explanation with the use of different investigative strategies. In Study 2 we assessed the extent to which participants made self-attributions for their outcomes, and showed that they played a key role in the interactive effect of procedural fairness and outcome favorability on self-evaluations. In Study 3 we manipulated the type of procedural fairness information (information accuracy versus interactional justice), the logic being that people are more likely to perceive the former than the latter as having a causal influence on their outcomes. Although the failure of the procedural fairness manipulation reduced the internal validity of the results of Study 2, the results of Study 3 were high in internal validity. Given the different investigative strategies in Studies 2 and 3, the convergence of support for the self-attribution explanation is all the more compelling.

5. Study 4

Many studies have shown that high procedural fairness reduces the relationship between outcome favorability and people's support for the system (Brockner & Wiesenfeld, 1996; Folger et al., 1983), relative to when procedural fairness is low. Studies 1–3 now join a much smaller group of studies showing that high procedural fairness heightens the positive relationship between outcome favorability and people's self-evaluations, relative to when procedural fairness is low (Gilliland, 1994; Ployhart et al., 1999; Schroth & Shah, 2000). The two different interactive relationships between outcome favorability and procedural fairness typically have been examined in separate research contexts. For both theoretical and methodological reasons, however, it is important to evaluate whether the two interactions effects may emerge in the same setting. At the theoretical level, for example, if both interactive relationships were to emerge in the same setting it would suggest that they are not mutually exclusive. Accordingly, in Study 4 we examined the interactive effect of outcome favorability and procedural fairness on people's support for the organization, *and* on their self-evaluations. Moreover, as in Study 1, the hypotheses were tested on a non-student sample in an actual work setting.

Testing for both interaction effects simultaneously is methodologically important as well. Because the two interaction effects have tended not to be investigated in the same setting, an alternative explanation is that they

are due to one or more of the countless methodological differences between the previous studies, rather than reflecting people's use of procedural fairness information to make attributions of responsibility for their outcomes to the other party and themselves. This alternative explanation becomes less likely, however, if the two different forms of the interaction effect emerge in the same setting.

Independent variables in Study 4 consisted of employees' ratings of outcome favorability and procedural fairness. The dependent variables included a measure of self-evaluation (self-rated job performance) and a measure of support for the system (organizational commitment). We expected to find interactive effects of outcome favorability and procedural fairness on both dependent variables. However, the form of the interaction was expected to differ:

Hypothesis 1. The tendency for outcome favorability to be positively related to self-rated job performance should be stronger when procedural fairness is high rather than low.

Hypothesis 2. The tendency for outcome favorability to be positively related to organizational commitment should be weaker when procedural fairness is high rather than low.

5.1. Method

5.1.1. Participants and procedure

Data were collected from members of the Kentucky Dental Hygienists Association (KDHA). Most states, including Kentucky, require that dental hygienists work under the supervision of a licensed dentist. A questionnaire survey was mailed to all 420 members of the KDHA. Respondents, who were promised anonymity, returned questionnaires by mail. A total of 267 questionnaires were returned (64% response rate), of which 38 were incomplete. On average, the 229 respondents retained in the study had practiced dental hygiene for 11.22 years ($SD = 9.44$).

All of the items on the survey were followed by seven-point rating scales. With the exception of self-rated job performance (as indicated below), endpoints were labeled "strongly disagree" (1) and "strongly agree" (7).

5.1.2. Independent variables

Outcome favorability. The outcome measure consisted of the five-item scale developed by Price and Mueller (1986) to assess the fairness of organizational rewards. (Recall from Study 1 that outcome fairness and outcome favorability interacted similarly with procedural fairness to influence employees' self-evaluations.) Respondents indicated the extent to which they agreed with statements "regarding the rewards (e.g., pay) you receive at the dental office in which you currently work most frequently." Sample items included, "I am fairly rewarded considering my responsibilities," and "I am

fairly rewarded in view of the amount of experience I have.” Coefficient α was .97. Responses to the five items were averaged.

Procedural fairness. Procedural fairness was measured with four items pertaining to the hygienists’ perceptions of the dentist’s decision-making procedures in the dental office in which they currently worked. Sample items included, “is able to suppress personal biases in making decisions that affect me,” and “gives adequate consideration to my viewpoints regarding decisions that affect me.” Coefficient α was .93. Responses to the four items were averaged.

5.1.3. *Dependent variables*

Organizational commitment. Organizational commitment was measured with four items adapted from the scale developed by Mowday, Steers, and Porter (1979). Respondents indicated the extent to which they agreed with the four statements regarding the dental office in which they currently worked. Sample items included, “I find that my values and this office’s values are very similar,” and “I am proud to tell others I am a part of this office.” Coefficient α was .90. Responses to the four items were averaged.

Self-rated job performance. Self-rated job performance consisted of the following single-item measure: “Regarding your performance at the dental office in which you work, how do you rate your overall job performance?” Endpoints were “very low” (1) and “very high” (7).

5.2. *Results and discussion*

Summary statistics are provided in Table 6.

5.2.1. *Tests of hypotheses*

Hypotheses 1 and 2 were tested with separate multiple regressions in which the main effects of outcome favorability and procedural fairness, as well as the interaction between the two, were entered simultaneously. The results are presented in Table 7. Of greatest concern are the interaction effects, which were significant at the .001 level on the measure of self-rated job performance and at the .01 level on the measure of organizational

commitment. To evaluate whether the form of the interactions were consistent with those specified in Hypotheses 1 and 2, we computed the relationship between outcome favorability and each of the dependent variables at both a high level of procedural fairness (mean + 1 *SD*) and a low level of procedural fairness (mean – 1 *SD*).

The relationships are illustrated graphically in Fig. 6 (for self-rated job performance) and Fig. 7 (for organizational commitment). Consistent with Hypothesis 1, the tendency for outcome favorability and self-rated job performance to be positively related was stronger when procedural fairness was high rather than low. Simple slope analyses, moreover, revealed that the relationship between outcome favorability and self-rated job performance was: (a) positive and significant when procedural fairness was high ($t = 2.71, p < .01$), and (b) not significant when procedural fairness was low ($t = -1.82, p < .05$). Consistent with Hypothesis 2, the tendency for outcome favorability and organizational commitment to be positively related was weaker when procedural fairness was high rather than low. Simple slope analyses showed that the relationship between outcome favorability and organizational commitment was: (a) significant at the .05 level when procedural fairness was high ($t = 2.23$), and (b) considerably more significant when procedural fairness was low ($t = 5.46, p < .001$).

Finally, the two interaction effects illustrated in Figs. 6 and 7 were significantly different from one another. That is, the *beta* for the interaction testing Hypotheses 1 was positive (i.e., significantly greater than zero), whereas the *beta* for the interaction testing Hypotheses 2 was negative (i.e., significantly less than zero).

The results of Study 4 show that the interactive effect of outcome favorability and procedural fairness generalizes to self-evaluations other than self-esteem. The tendency to evaluate one’s own performance positively when outcomes are more favorable is greater when procedural fairness is relatively high (see also Ployhart & Ryan, 1997). Moreover, Study 4 shows simultaneously that high procedural fairness leads to: (a) more of a positive relationship between outcome favorability and people’s self-evaluations, relative to when procedural fairness is low, and (b) less of a positive relationship

Table 6
Summary statistics (Study 4)

Variable	Range	<i>M</i>	<i>SD</i>	1	2	3	4
1. Outcome favorability	1–7	4.78	1.81	(.97)			
2. Procedural fairness	1–7	4.95	1.60	.68***	(.93)		
3. Organizational commitment	1–7	5.47	1.42	.65***	.74***	(.90)	
4. Self-rated job performance	1–7	6.23	.70	.16*	.21**	.22**	–

Note. Coefficient *zs* are in parentheses.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

Table 7
Hierarchical multiple regressions (Study 4)

Predictor variables	Organizational commitment			Self-rated job performance		
	<i>B</i>	<i>F</i>	<i>p</i>	<i>B</i>	<i>F</i>	<i>p</i>
Outcome favorability	.21	21.22	.001	.02	.40	n.s.
Procedural fairness	.46	79.46	.001	.11	8.86	.01
Outcome favorability × procedural fairness	-.05	6.83	.01	.06	16.0	.001
	Overall $F(3, 225) = 113.61$ $p < .001$; total $R^2 = .60$			Overall $F(3, 225) = 8.98$, $p < .001$; total $R^2 = .11$		

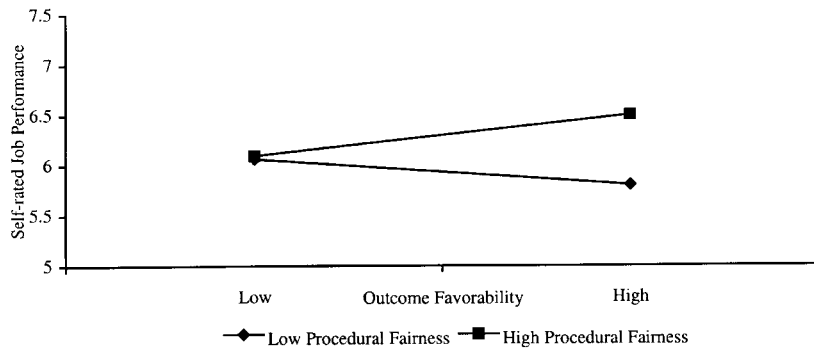


Fig. 6. Effects of outcome favorability and procedural fairness on self-rated job performance (Study 4).

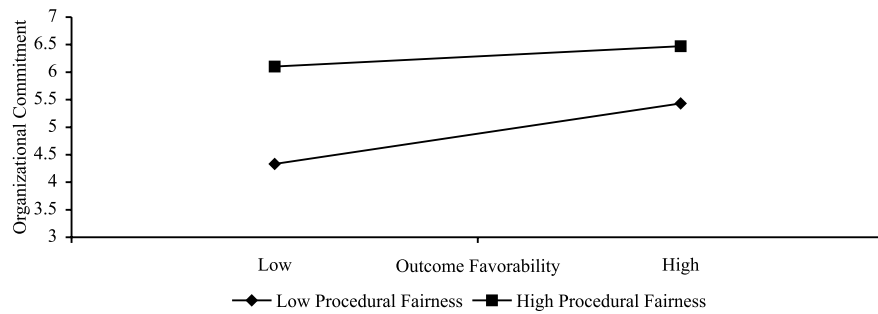


Fig. 7. Effects of outcome favorability and procedural fairness on organizational commitment (Study 4).

between outcome favorability and people’s support for the system, relative to when procedural fairness is low. Thus, the results of Study 4 suggest that the two different interactive relationships between outcome favorability and procedural fairness are not mutually exclusive. In addition, the findings suggest that the two different interactive relationships that previously have been shown in separate settings are not an artifact of the numerous methodological differences between the studies.

6. General discussion

We began this research by noting that the interactive effect of outcome favorability and procedural fairness on

employees’ support for the system has been well-established. More than 40 studies conducted subsequent to the seminal findings of Folger et al. (1983) have shown that high procedural fairness reduced the positive relationship between outcome favorability and people’s support for the system, relative to when procedural fairness was low (Brockner & Wiesenfeld, 1996). In contrast, an interaction effect taking a very different form also has been found on measures of self-evaluation (Mark & Folger, 1984), in which high procedural fairness heightens the influence of outcome favorability (Gilliland, 1994; Ployhart et al., 1999; Schroth & Shah, 2000). Although the interaction effect on measures of self-evaluations has been found on several occasions, it is not nearly as well documented. The results of Studies

1 and 4 serve to heighten the external validity of the interactive effect of outcome favorability and procedural fairness on self-evaluations. This evidence for generalizability is particularly compelling given that the work organizations examined in Studies 1 and 4 were quite different from one another.

Of greater theoretical significance, the present research helps to explain why higher procedural fairness heightens the effect of outcome favorability on self-evaluations. In Study 2 we hypothesized that people use procedural fairness information to determine how much to make self-attributions for their outcomes. The results of Study 2 suggested that it was the extent to which people made self-attributions for their outcomes (elicited by procedural fairness information) that moderated the effect of outcome favorability on self-evaluations. The results of Study 3 provided converging support for the attributional explanation of the tendency for high procedural fairness to heighten the effect of outcome favorability on self-evaluations, relative to when procedural fairness is low. Study 4 came full circle in evaluating the two different forms of the interactive relationship between outcome favorability and procedural fairness. The results of Study 4 showed that higher procedural fairness both: (a) heightened the positive relationship between outcome favorability and people's self-evaluations, and (b) reduced the positive relationship between outcome favorability and people's support for the system, relative to when procedural fairness was low.

6.1. Theoretical implications

The present findings have important implications for two important frameworks in the organizational justice literature: relational theory (e.g., Tyler & Lind, 1992) and fairness heuristic theory (e.g., Van den Bos, 2001). Relational theory posits that people use procedural fairness information to assess their standing in the eyes of significant others; the higher (lower) the procedural fairness, the more (less) likely are people to infer that they are held in high regard. An important prediction of relational theory is that procedural fairness is positively related to people's self-esteem (Koper, Van Knippenberg, Bouhuijs, Vermunt, & Wilke, 1993). The present results provide an important boundary condition to this prediction. When outcomes are unfavorable, procedural fairness is much less likely to be positively related to self-esteem, relative to when outcomes are favorable.

Fairness heuristic theory suggests that people use procedural (and other sorts of) fairness information to make inferences about their relationships with others, most notably authority figures. As Van den Bos et al. (1999) suggested, "Because ceding authority to another person provides an opportunity for exploitation, people may feel uncertain about their relationship with an authority. Therefore, the theory argues, people want to

know whether the authority can be trusted, whether the authority will treat them in an honest and unbiased way, and whether the authority will accord them the appropriate standing as a member of their group" (p. 325). The present studies suggest that people may use procedural fairness information for purposes other than to inform them of their relationship with important others such as authorities. Attribution theory suggests that people seek to understand the causes of their outcomes, particularly those that are unexpected or unfavorable. Whereas the attributions people make for their outcomes may inform them of their relationships with others, outcome attributions need not be in the service of addressing relational considerations. Even in non-social evaluative situations, people often want to know why they performed as they did, and what this says about how they should be feeling about themselves (Weiner, 1985). In short, the present findings suggest that fairness heuristic theory should be expanded to accommodate how, when, and why people use procedural fairness information for non-relational sense-making purposes.

6.2. Limitations

Each of the present studies has several shortcomings. In most instances, however, the shortcomings are addressed in one or more of the other studies, or by findings from previous research. For example, the independent variables of outcome favorability and procedural fairness were measured in Studies 1 and 4, as was the independent variable of procedural fairness in Study 2. Thus, the internal validity of the effects associated with these factors may be questioned. Both independent variables were manipulated in Study 3, however, as was the independent variable of outcome favorability in Study 2. Consequently, we can confidently conclude that these factors had a causal impact on self-esteem in these instances.

Moreover, the total amount of variance explained on the measures of self-evaluation was fairly small in Studies 1 and 4. One likely explanation is that the range on these measures was quite restricted in both studies; average ratings of self-evaluations were quite high and the standard deviations were low. Future research tapping a wider range of self-evaluations may well find that greater variance is accounted for by outcome favorability, procedural fairness, and the interaction of the two (e.g., see Ployhart & Ryan's (1997) findings on their measure of self-rated job performance). Finally, the measure of self-rated job performance in Study 4 consisted of a single item of unknown reliability. Although this shortcoming cannot be eliminated entirely, we should note that Ployhart and Ryan found similar results using a five-item measure with proven construct validity. Thus, the results obtained on the measure of

self-rated job performance in Study 4 do not appear to be an artifact of the use of a single-item measure.

In summary, the present findings need to be considered in conjunction with one another, and with previous research. Although each study has shortcomings, the set of findings provides several important contributions to the organizational justice literature.

6.3. Practical implications

An ongoing challenge for managers is to maintain the support of their direct reports for organizational decisions, particularly when those decisions are perceived to produce unfavorable outcomes. One recommendation from the organizational justice literature is that in the face of decisions yielding unfavorable outcomes, it is especially important for the procedures accompanying those decisions to be fair (e.g., Lind & Tyler, 1988).

The present findings reveal a *possible* dilemma embedded in the seemingly straightforward prescription for managers to be procedurally fair, especially when implementing unfavorable outcomes. Although high procedural fairness may elicit greater employee support for the system (e.g., organizational commitment), high procedural fairness may have little influence on employees' self-evaluations (e.g., Studies 2 and 4) or may actually cause employees to evaluate themselves more negatively (e.g., Studies 1 and 3), relative to if procedures were less fair. Especially in the latter circumstance, the management challenge is not simply to be procedurally fair when making decisions that yield unfavorable outcomes, which, by itself, can be a daunting task (Folger & Pugh, 2002; Folger & Skarlicki, 2001). It also may be necessary for organizations to address potential reductions in employee self-evaluations elicited by that very procedural fairness. For example, having people work on a task at which they are likely to succeed may be especially welcomed if they have recently suffered a blow to their self-esteem. In short, the present findings suggest that previous managerial recommendations to be procedurally fair may not be sufficient. Managers should consider the possibility that fair procedures may actually lower employees' self-esteem when outcomes are unfavorable, and take action *when appropriate* to counteract this possibility.

When is it appropriate for managers to take such action? At least two factors need to be considered. The first is whether procedural fairness is inversely related to self-evaluations (e.g., as in Studies 1 and 3) versus unrelated to self-evaluations (e.g., as in Studies 2 and 4). The latter circumstance may require less action on managers' part than the former. After all, if greater procedural fairness leads employees to be more supportive of the system without having any adverse influence on their self-esteem, then managers may have less of a tradeoff by being procedurally fair.

Second, although managers may not want to lower their employees' self-evaluations per se, managers may sometimes prefer to implement unfavorable outcomes in ways that are self-deflating to a subordinate, to motivate the subordinate to improve. For example, suppose that a manager were giving negative feedback to a subordinate (e.g., an unfavorable performance appraisal), that the manager wanted to be taken seriously. If so, the manager may wish to communicate that the procedures used to arrive at the appraisal were fair. High procedural fairness in this instance should cause the subordinate to make more of a self-attribution for the negative feedback, thereby making it more impactful. Although the accompanying reduction in self-evaluation may be unpleasant to the subordinate, from the manager's perspective this may be what the subordinate needs to experience to be motivated to improve. Of course, this reasoning is based on the assumption that negative feedback motivates people to improve their performance, which is itself a matter of considerable complexity (e.g., Kluger & DeNisi, 1996). In conclusion, when outcomes are unfavorable, future research needs to clarify whether greater procedural fairness reduces employees' self-evaluations, and also, whether such effects are functional to the employees, to the organization, to both, or to neither.

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