

Assimilation and contrast in organizational justice: The role of primed mindsets in the psychology of the fair process effect

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Abstract

This paper focuses on the psychology of the fair process effect (the frequently replicated finding that perceived procedural fairness positively affects people's reactions). It is argued that when people have received an outcome they usually assimilate their ratings of outcome fairness and affect toward their experiences of procedural fairness. As a result, ratings show fair process effects. It is also possible, however, that when people have received their outcome they compare this outcome to the procedure they experienced: Is the outcome better or worse than the procedure? A result of this comparison process may be that contrast effects are found such that higher levels of procedural fairness lead to more negative ratings of outcome fairness and affect. Research findings suggest that when comparison goals have been primed, contrast effects indeed can be found. The implications for the psychology of the fair process effect and organizational behavior are discussed. © 2002 Elsevier Science (USA). All rights reserved.

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Justice is a key issue for understanding organizational behavior (Cropanzano & Folger, 1989, 1991; Cropanzano & Greenberg, 1997; Folger & Cropanzano, 1998; Greenberg, 1990, 1993). One of the most important contributions of the work on organizational justice, and one of the most frequently replicated findings in organizational behavior, has been the discovery that perceived procedural fairness positively affects people's reactions (Folger, 1977; Folger, Rosenfield, Grove, & Corkran, 1979; Tyler, 1990; Walker, LaTour, Lind, & Thibaut, 1974). These fair process effects have been found on people's reactions to procedures received from various authorities, such as organizational authorities (Folger & Konovsky, 1989), police authorities (Tyler & Folger, 1980), political authorities (Tyler & DeGoe, 1995), and authorities in court trials (Lind, Kulik, Ambrose, & De Vera Park, 1993). Furthermore, as has been noted by Lind and Tyler (1988), an exciting aspect of research on the fair process effect is that the effect has been found on very different

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human reactions (for overviews, see Lind & Tyler, 1988; Tyler & Lind, 1992). This is important because it suggests that fair process studies may have substantial implications for a multitude of domains of human behavior. In the current paper, therefore, I try to show effects of perceived procedural fairness on different human reactions. More specifically, I investigate fair process effects on ratings of outcome fairness and negative affect.

An illustration of previous research in which fair process effects were reported on outcome fairness judgments can be found in Van den Bos, Bruins, Wilke, and Dronkert (1999). Participants in the second experiment presented in that article completed an estimation test, consisting of 20 estimation items. The procedure manipulation was such that the experimenter graded all 20 items (accurate procedure) or only 1 of the 20 items (inaccurate procedure). Main dependent variables were participants' judgments of fairness of an outcome they subsequently received (for details, see Van den Bos et al., 1999). As expected, participants judged the accurate procedure to be more fair than the inaccurate procedure. More interestingly, in the conditions that are relevant for the current purposes, fair process effects were found such that participants judged their outcome to be more fair following the fair procedure as opposed to the unfair procedure.

An example of research in which fair process effects were found on ratings of negative affect is the experiment reported by Vermunt, Wit, Van den Bos, and Lind (1996). In this study, participants completed an estimation test consisting of 10 items, and the procedure manipulation was such that the experimenter graded 8 of the 10 items (slightly inaccurate procedure) or 1 of the 10 items (very inaccurate procedure). The fair process effects that were found in the experiment included that participants showed higher ratings of negative affect following the very inaccurate procedure as opposed to the slightly inaccurate procedure.

Thus, numerous studies show the robustness of the fair process effect. Indeed, the fair process effect is one of the most important factors that has led some procedural justice researchers to conclude that perceived procedural fairness may affect people's reactions more strongly than outcome fairness perceptions (see, e.g., Lind & Tyler, 1988, p. 1). This led to the situation that procedural justice research nowadays tends to focus on one aspect of the psychological process leading to fairness and other judgments: procedures. Distributive justice researchers, on the other hand, also tend to focus on one aspect of the fairness judgment process: outcomes. Some researchers even suggest that outcomes may be more important for people's fairness judgments than procedures (e.g., Lerner & Whitehead, 1980). Thus, both procedural and distributive justice research tend to focus on only one aspect of the fairness judgment process, at the expense of other important concepts. As several authors have pointed out, it is now time to integrate the procedural and distributive justice domains (e.g., Brockner & Wiesenfeld, 1996; Cropanzano & Folger, 1991; Greenberg, 1990; Van den Bos, Lind, Vermunt, & Wilke, 1997a).

One of the reasons why it is important to study fair process effects is that this may further the integration of the procedural and distributive justice domains. More specifically, it will be argued here that if we want to understand the psychology of fair process effects we have to assess how people may react to the outcomes they have received. In other words, the effects of perceived procedural fairness depend on how people react toward their outcomes.

In this paper, I will try to provide new insights into the psychology of the fair process effect (for overviews of earlier explanations, see, e.g., Greenberg & Folger, 1983; Lind & Tyler, 1988; Van den Bos, Lind, & Wilke, 2001). The contribution I am trying to make to the literature is testing a specific set of conditions under which the fair process effect—a well-established finding in the literature—might be reversed. Previous studies have shown some conditions under which reversals of the fair process effect can be found. For example, Folger's (1977) research on the frustration

effect shows that when voice procedures are repeatedly followed by inequitable outcomes people might become frustrated about their voice opportunities, and hence react more negatively to voice procedures than to no-voice procedures. Van den Bos, Vermunt, and Wilke (1996) research on the consistency rule and the voice effect shows that when people are led to expect a no-voice procedure they may react more negatively to voice procedures than to no-voice procedures. Van den Bos et al. (1999) demonstrated that if unfavorable outcomes strongly instigate attribution-seeking processes, people may start looking for causes that explain why they received an unfavorable outcome. Because unfair procedures provide an opportunity to attribute one's unfavorable outcome to external causes, whereas fair procedures do not, people may react more negatively following fair as opposed to unfair procedures in contexts in which they feel they are strongly evaluated (for details, see Van den Bos et al., 1999; see also Gilliland, 1994; Ployhart & Ryan, 1997; Ployhart, Ryan, & Bennett, 1999).

In the current article, it will be argued that activating people's goals may lead them to compare procedure and outcome information and hence lead to reversals of fair process effects. As a starting-point for my line of reasoning, I argue here that fair process effects can be interpreted as assimilation effects. More specifically, the assimilation effects I am interested in here take place if ratings of outcome fairness and affect are adjusted toward experiences of procedural fairness such that higher levels of perceived procedural fairness lead to more positive ratings of outcome fairness and affect. Furthermore, I propose that integrating new insights from the social judgment literature (Stapel & Koomen, 2001a,b) with the organizational justice domain may reveal as yet unidentified and unexplored conditions under which contrast effects are more likely to occur. The contrast effects I take an interest in here occur if ratings of outcome fairness and affect are altered into the opposite direction of the procedural fairness anchor such that higher levels of perceived procedural justice lead to more negative ratings of outcome fairness and affect. Thus, I argue that assimilation may lead to fair process effects whereas contrast may lead to reversals of fair process effects. In what follows I will go into this explanation of the psychology of the fair process effect more deeply.

1. The psychology of the fair process effect

In previous studies, my co-authors and I argued that, to better understand the psychology of the fair process effect, it has to be investigated how people react to the outcomes they have received (e.g., Van den Bos et al., 1997a; Van den Bos, Wilke, & Lind, 1998a; Van den Bos, Wilke, Lind, & Vermunt, 1998b). Van den Bos and Lind (2002) recently argued that these previous studies show that, although generally in the research literature it is assumed that it is fairly clear to people which outcomes are more desirable, people typically tend to be somewhat uncertain as to how to rate the fairness of the outcome they have received and how to rate their feelings of affect after having received the outcome (see also Van den Bos, 2001; Van Prooijen, Van den Bos, Wilke, & Lind, 2001). As a result, when people are asked to indicate their ratings of outcome fairness and affect they turn to the fairness of the procedures they experienced and hence their ratings of outcome fairness and affect indicate fair process effects. Research findings are in accordance with this line of reasoning (see Van den Bos et al., 1997a; Van den Bos et al., 1998a; Van den Bos et al., 1998b).

What I propose to do here is to study an as yet unexplored implication of this process. That is, it is a well-known fact that conditions of uncertainty foster anchoring effects (e.g., Kahneman, Slovic, & Tversky, 1982). Integrating this insight with the above-mentioned role of uncertainty in the psychology of the fair process

effect suggests that it should be possible to find both assimilation and contrast effects on people's ratings of outcome fairness and affect.

Besides uncertainty, an important precondition before assimilation and contrast effects can happen is that stimuli are comparable. In the experiment to be presented below, therefore, participants completed an estimation task consisting of 20 estimation items. The manipulation of procedure was such that participants were informed that the experimenter graded 2 of the 20 items (very inaccurate procedure) or 18 of the 20 items (slightly inaccurate procedure). Furthermore, participants were told that at the end of the experiment they could receive between 0 and 20 lottery tickets. At the end of the experiment, all participants received 10 of the 20 tickets. Thus, both procedural and outcome information were on scales that ranged from 0 to 20, making procedural and outcome stimuli relatively comparable.

Stapel and Koomen (2001a) argue that many models of social judgment assert that both the *interpretation* of a perceived target stimulus and the *comparison* of this stimulus to a relevant standard are important components of person impression formation processes. Furthermore, these authors show that activating interpretation goals is more likely to produce assimilation effects whereas activating comparison goals is more likely to yield contrast effects. Following this line of reasoning, I propose that when participants have received their outcome in the experiment to be presented below, they may show two types of reactions.

When participants have received their outcome, one type of reaction is that they may *interpret* the outcome in terms of the procedure they experienced: Was the procedure fair or unfair? A consequence of this interpretation process may be that when participants have experienced the very inaccurate procedure they may adjust their ratings of outcome fairness and affect toward their experiences of procedural fairness and hence indicate negative ratings of outcome fairness and affect. When participants have experienced the slightly inaccurate procedure they may assimilate their outcome fairness and affect ratings toward their perceptions of procedural fairness and thus give more positive ratings of outcome fairness and affect. In other words, interpretation may lead to assimilation effects.

A different type of reaction is that when participants have received their outcome, they may *compare* their outcome to the procedure they experienced: Is the outcome better or worse than the procedure? A result of this comparison process may be that participants who have experienced the very inaccurate procedure (2 of the 20 items were graded) may come to the conclusion that their outcome (10 of the 20 tickets were received) is better than the procedure has been and hence give positive ratings of outcome fairness and affect. Participants who have experienced the slightly inaccurate procedure (18 of the 20 items graded) may come to the conclusion that their outcome (10 of the 20 tickets received) is worse than the procedure and hence indicate negative ratings of outcome fairness and affect. To put it differently: Comparison may lead to contrast effects.

In the experiment to be presented here, I primed participants' goals such that either interpretation goals, comparison goals, or no goals were activated. That is, before participants received procedure and outcome information in the experiment, they performed a task that was unrelated to the experiment. Following Stapel and Koomen (2001a), this task was used to prime participants' mindsets. In the task, participants were presented a number of short behavioral descriptions. In the interpretation goal condition, participants were asked to write down what kind of person the stimulus person was (cf. Stapel & Koomen, 2001a). In the comparison goal condition, participants were asked to compare the situation with another situation (cf. Stapel & Koomen, 2001a). To replicate previous fair process experiments, participants in the goal absent condition were not asked to complete a mindset-priming task.

After participants' mindsets thus had been primed, procedure was manipulated and participants received their outcome. Main dependent variables were participants' outcome fairness judgments and their ratings of negative affect. Following previous fair process studies, it was predicted that in the goal absent condition, fair process effects would be found: Participants' ratings of outcome fairness and affect would be more positive following the slightly inaccurate procedure as opposed to the very inaccurate procedure (Hypothesis 1). On the basis of the above-presented line of reasoning, it was hypothesized that in the interpretation goal condition fair process effects would also be found: Participants' ratings of outcome fairness and negative affect would be more positive following the slightly inaccurate procedure as opposed to the very inaccurate procedure (Hypothesis 2). In the comparison goal condition, however, a reversal of the fair process effect was expected: Ratings of outcome fairness and affect would be less positive following the slightly inaccurate procedure than following the very inaccurate procedure (Hypothesis 3).

2. Method

2.1. Participants and design

One hundred fourteen students (33 men and 81 women) at Leiden University participated in the experiment and were paid for their participation. Participants were randomly assigned to one of the conditions of the 3 (goal: absent vs. interpretation vs. comparison) × 2 (procedure: slightly inaccurate vs. very inaccurate) factorial design. The design was balanced with 19 participants assigned to each of the 6 conditions.

2.2. Experimental procedure

Participants were invited to the laboratory to participate in a study on how people perform tasks. On arrival at the laboratory, participants were led to 1 of 8 separate cubicles, each of which contained a computer with a monitor and a keyboard. Participants were told that the computers were connected to one another, and that the experimenter could communicate with them by means of the computer network. The computers were used to present the stimulus information and to collect data on the dependent variables and the manipulation checks. Participants took part in the experiment after participating in another, unrelated experiment. The experiments lasted a total of 1 h, and participants were paid 10 Dutch guilders (1 Dutch guilder equaled approximately \$0.50 US at the time the study was conducted).

In the first part of the instructions, the experimental procedure was outlined to the participants: After the experimental tasks were explained, participants would practice the tasks for 2 min, after which time they would work on the tasks for 10 min. Furthermore, participants were informed that, after all participants were run, a lottery would be held among all participants. The winner of this lottery would receive 100 Dutch guilders. (Actually, after all participants had completed the experiment, the 100 Dutch guilders were randomly given to one participant; a procedure to which none of the participants objected upon debriefing.) Participants were told that after the work round lottery tickets would be divided, and that they then could receive between 0 and 20 lottery tickets.

The task that participants had to complete was then explained. Participants were instructed that they would perform a work round in which they would complete an estimation task consisting of 20 estimation items. After the estimation items were

explained, and before the work round started, they would practice the estimation task in a practice round, also consisting of 20 estimation items. The estimation items were then explained: For each estimation item, figures would be presented on the computer screen. Participants were informed that each figure would consist of 180 squares, and that each square would be either black or white. For each estimation item, a figure was presented for 5 s on the computer screen, and participants had to estimate the number of black squares in the figure (cf. Van den Bos et al., 1999). In correspondence with Van den Bos et al. (1999), all participants were informed that the computer program would calculate the deviation of their answers from the true, objective amount of black squares and that an answer was graded as correct when the answer did not deviate more than 5 of the objective amount of black squares. To ensure comprehension of the experimental procedure, 3 practice questions were posed. If participants gave a wrong answer to a question, the correct answer was disclosed.

The practice round then began, after which the work round began. After the work round had ended, the goal manipulation was introduced. Participants in the interpretation and comparison goal conditions found a questionnaire lying next to their monitor. Participants were told that this questionnaire assessed how people react to everyday situations and were led to believe that the questionnaire was unrelated to the study they were participating in (debriefing interviews indicated participants believed this). Participants were asked to complete the questionnaire and were informed that after they had completed the questionnaire the study would continue. The questionnaire was used to prime participants' mindsets and was similar to the stimulus materials used by Stapel and Koomen (2001a). An English translation of the exact stimulus materials can be found in appendix. In the questionnaire, participants were presented 11 short behavioral descriptions (e.g., "At the market, the market vendor sells Kees a bag of apples for 4 guilders"). Following Stapel and Koomen (2001a), participants in the interpretation goal condition were asked to write down what kind of person the stimulus person was (e.g., "Describe briefly what kind of person Kees is and in what kind of situation he finds himself") and participants in the comparison goal condition were asked to compare the situation with another situation (e.g., "To what extent are the apples expensive or inexpensive, when you compare it to what you would pay for a bag of apples in a supermarket, 1 = very inexpensive, 7 = very expensive"). Following previous fair process experiments (e.g., Van den Bos et al., 1999; Van den Bos, Vermunt, & Wilke, 1997b), participants in the goal absent condition were not informed about the questionnaire and were not asked to complete the questionnaire.

After this, the manipulation of procedure was introduced. Participants in the slightly inaccurate procedure condition were informed that the experimenter had graded 18 of the 20 estimation items of the work round. In the very inaccurate procedure condition, it was communicated to the participants that the experimenter had graded 2 of the 20 estimation items. After this, participants were informed that they received 10 of the 20 lottery tickets. To ensure comprehension of the procedure that was followed and the outcome that was received, participants were asked how many estimation items the experimenter had graded and how many lottery tickets they had received. If participants gave a wrong answer to a question, the correct answer was disclosed.

Participants were then asked questions pertaining to the dependent variables and the manipulation checks. All ratings were made on 7-point scales. Participants' outcome fairness judgments were assessed by asking participants how fair (1 = very unfair, 7 = very fair), just (1 = very unjust, 7 = very just), and justified (1 = very unjustified, 7 = very justified) they judged the number of lottery tickets they received to be. Participants' answers on these three questions were averaged to form a reliable

index of their outcome fairness judgments ($\alpha = .91$). Participants' ratings of negative affect were assessed by asking participants how angry (1 = not at all angry, 7 = very angry), hostile (1 = not at all hostile, 7 = very hostile), and furious (1 = not at all furious, 7 = very furious) they felt at this moment. These ratings were averaged to form a reliable scale of negative affect ($\alpha = .90$). To check whether the manipulation of procedure was induced as intended, participants' procedural fairness judgments were solicited by asking participants how fair (1 = very unfair, 7 = very fair), just (1 = very unjust, 7 = very just), and justified (1 = very unjustified, 7 = very justified) they considered the way in which they had been treated. These answers were averaged to form a reliable scale of participants' procedural fairness judgments ($\alpha = .85$).¹

3. Results

3.1. Procedural fairness judgments

As expected, a 3×2 analysis of variance (ANOVA) on participants' procedural fairness judgments yielded only a main effect of procedure, $F(1, 108) = 105.68$, $p < .001$. Inspection of the means indicated that participants in the slightly inaccurate procedure condition judged the procedure to be more fair ($M = 5.0$, $SD = 1.3$) than those in the very inaccurate procedure condition ($M = 2.9$, $SD = 1.0$). This suggests that the manipulation of procedure was successful in affecting the relative strength of participants' procedural fairness judgments in ways that were intended with this manipulation.

3.2. Dependent variables

Means and standard deviations of the outcome fairness and negative affect scales are presented in Table 1. Overall and within-goal condition correlations between the ratings of outcome fairness, negative affect, and procedural fairness are presented in Table 2. I first inspected the multivariate effects on the outcome fairness and negative affect scales. A 3×2 multivariate analysis of variance (MANOVA) yielded only a multivariate main effect of procedure, $F(2, 107) = 10.69$, $p < .001$, and a multivariate interaction effect between goal and procedure, $F(4, 214) = 3.11$, $p < .02$.

I then tested the multivariate interaction contrast that was pertinent to my hypotheses. That is, the hypotheses were that normal fair process effects would be found in the goal absent and interpretation goal conditions whereas reversals of the fair process effect would be found in the comparison goal condition. In other words, these hypotheses led to the expectation of an interaction between procedure and a contrast vector that contrasted the comparison goal condition with the mean of the goal absent and interpretation goal conditions. This interaction contrast was analyzed in a 3×2 MANOVA. As predicted, this analysis yielded only a multivariate main effect of procedure, $F(2, 107) = 10.69$, $p < .001$, and a multivariate interaction effect between the contrast vector and procedure, $F(2, 107) = 4.62$, $p < .02$. These findings were in correspondence with predictions of Hypotheses 1 to 3. After this, the univariate effects on both scales were inspected.

A 3×2 ANOVA on participants' *outcome fairness judgments* indicated only a main effect of procedure, $F(1, 108) = 21.51$, $p < .001$. Participants in the slightly

¹ Following previous work on human judgment (e.g., Stapel & Koomen, 2001a), the goal manipulation was not explicitly checked, but debriefing interviews indicated that this manipulation was induced as intended.

Table 1
Means and standard deviations of judgments of outcome fairness and ratings of negative affect as a function of goal and procedure

Dependent variable	Procedure	Goal					
		Absent		Interpretation		Comparison	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Outcome fairness judgments	Slightly inaccurate	4.7	1.2	4.8	1.0	5.1	1.2
	Very inaccurate	3.1	1.3	4.2	1.4	3.9	1.3
Negative affect	Slightly inaccurate	1.3	.7	1.1	.3	1.8	1.2
	Very inaccurate	1.9	1.3	1.4	.9	1.2	.5

Note. Means are on 7-point scales, with higher values indicating higher ratings of the dependent variable in question.

Table 2
Overall and within-goal condition correlations between ratings of procedural fairness, outcome fairness, and negative affect

Condition		Procedural fairness	Outcome fairness	Negative affect
Overall	Procedural fairness	–		
	Outcome fairness	.43 ($p < .001$)	–	
No goal	Negative affect	–.00 ($p < .99$)	–.17 ($p < .07$)	–
	Procedural fairness	–		
	Outcome fairness	.54 ($p < .001$)	–	
	Negative affect	–.22 ($p < .20$)	–.22 ($p < .19$)	–
Interpretation goal	Procedural fairness	–		
	Outcome fairness	.22 ($p < .20$)	–	
	Negative affect	.01 ($p < .94$)	–.10 ($p < .56$)	–
Comparison goal	Procedural fairness	–		
	Outcome fairness	.44 ($p < .01$)	–	
	Negative affect	.28 ($p < .10$)	–.11 ($p < .53$)	–

inaccurate procedure condition judged their outcome to be more fair than those in the very inaccurate procedure condition. Thus, strong fair process effects were found. Contrary to expectations, however, no significant interaction effect was found, $F(2, 108) = 1.61$, $p < .21$. I will return to this point in the Discussion.

A 3×2 ANOVA on participants' ratings of negative affect yielded only a significant interaction effect, $F(2, 108) = 4.70$, $p < .02$. This result corresponded with predictions of Hypotheses 1–3. I then tested whether the interaction between procedure and the contrast vector that contrasted the comparison goal condition with the mean of the goal absent and interpretation goal conditions was significant. This interaction contrast was analyzed in a 3×2 ANOVA. This analysis yielded only a significant interaction effect, $F(1, 108) = 9.03$, $p < .01$. This result was in accordance with predictions. After this, simple main effects were inspected. In the goal absent condition, participants' ratings of negative affect showed an effect of procedure that just failed to reach conventional levels of significance, $F(1, 108) = 3.61$, $p = .06$. Inspection of the means suggested that, in correspondence with Hypothesis 1, participants tended to show less negative affect after having been treated in a slightly inaccurate as opposed to a very inaccurate way. In the interpretation goal condition,

no significant procedure effect was found, $F(1, 108) = 1.09, p < .30$. This finding was in contrast with Hypothesis 2. I will return to this finding in the Discussion. In the comparison goal condition, however, participants' ratings of negative affect showed a significant reversal of the fair process effect, $F(1, 108) = 4.87, p < .03$. That is, in accordance with Hypothesis 3, participants showed higher ratings of negative affect in the slightly inaccurate procedure condition than in the very inaccurate procedure condition.

4. Discussion

The findings reported here showed that procedural fairness judgments were more positive following the slightly inaccurate procedure than following the very inaccurate procedure. Similarly, outcome fairness judgments yielded only a main effect of procedure: Outcomes were judged to be more fair following the slightly inaccurate procedure as opposed to the very inaccurate procedure. Thus, these findings showed strong fair process effects. Fair process effects were also indicated on negative affect ratings in the goal absent condition in that participants' ratings of affect in that condition tended to be less negative after the slightly inaccurate procedure than after the very inaccurate procedure. Negative affect ratings did not yield a significant procedure effect within the interpretation goal condition. As hypothesized, however, participants in the comparison goal condition showed *more* negative affect following the somewhat inaccurate procedure than following the very inaccurate procedure.

Thus, in contrast with what was expected, outcome fairness judgments only showed strong fair process effects. Interaction effects were found, however, on ratings of negative affect. The procedure effect failed to reach conventional levels of significance in the goal absent condition on participants' ratings of negative affect. However, the procedural fairness judgments presented here show that the manipulation of procedural fairness was successfully induced and the outcome fairness judgments revealed that the fair process effect was very strong. Furthermore, the negative affect ratings do show that in the comparison goal conditions contrast effects can be found such that lower levels of perceived procedural fairness lead to higher ratings of negative affect. This suggests that if people compare procedural and outcome information contrast effects can be found.

Some additional evidence for the predictions may be derived from the within-goal conditions correlations between procedural fairness and negative affect (see Table 2). That is, ratings of procedural fairness and negative affect tended to correlate negatively within the no-goal condition ($r = -.22$) and positively within the comparison-goal condition ($r = +.28$). These two correlations differ significantly from each other, $\chi^2(1) = 4.58, p < .05$, indicating that judgments of procedural fairness and ratings of negative affect are differently associated with each other, depending on whether people are primed with no goal or with a comparison goal. The hypotheses of the current paper were tested by means of analyses of variance, of course, but future research may want to further explore within-condition correlations as a function of primed mindsets.

Weak fair process effects were found in the interpretation goal condition. This was clearly seen on participants' ratings of negative affect, but, to a lesser extent, on outcome fairness judgments as well (for details, see Table 1). Perhaps giving participants a questionnaire about how people react to everyday situations interfered too much with the flow of the experiment, making it difficult to get good fair process effects in that condition. Another possibility is that procedural and outcome information were very comparable with each other in the experiment reported here,

making it very easy to compare and contrast procedural and outcome information. This may have weakened fair process effects, especially on ratings of affect, which are more easily influenced by specifics of stimulus materials than judgments of fairness (cf. Van den Bos, 2001; Van den Bos & Miedema, 2000). In other words, when comparability is held at a constant high level in a study (as was done in the current study), there may be a problem in being able to simultaneously test (and find) interpretive and comparative effects in the same study. It is important, therefore, to include comparability of stimulus materials (high vs. low) as an additional factor in future studies. Future research clearly is needed to explore these and other possibilities.

It should be concluded that the present findings were weaker than was hoped for. Perhaps this was caused by limited power of the statistical tests presented here. If this would be the case this may partly explain why some of the tests did not reach significance. It should be noted here, however, that the sample size used here (with 19 participants assigned to each cell of the experimental design) was quite reasonable and was similar to the sample sizes used in other experimental studies with more successful results (e.g., Van den Bos et al., 1997a; Van den Bos & Miedema, 2000; Van den Bos et al., 1996, 1997b), making it not very likely that the present null results might be attributable to low statistical power.

The experiment presented here failed to induce strong affective reactions in participants. After all, the means of the negative affect measure reported here were all below 2 on the 7-point scale, which is not even close to the midpoint. However, it also seems fair to say that some of the findings reported here provide new and interesting insights into the psychology of the fair process effect. After all, the findings have revealed that when comparison goals have been primed, contrast effects can be found such that higher levels of perceived procedural fairness lead to more negative ratings of affect.

Perhaps affect ratings are more susceptible to the effects of primed comparison goals and hence are better suited to tap reversal effects than outcome fairness judgments are. This may be related to the suggestions made by Weiss, Suckow, and Cropanzano (1999) that it is important to measure people's affective reactions to perceived fairness. Alternatively, affect ratings may be qualitatively different from fairness perceptions, yielding different effects of primed mindsets on affect-based and fairness-based judgments. Future justice research may want to incorporate people's affective reactions in their dependent variables lists, since the affect data presented here show interesting results, and may want to explore the differences between fairness judgments and ratings of affect. This could further enhance insights into the psychology of important organizational justice phenomena.

Markovsky (1988) argued that under conditions of uncertainty an individual's outcome will be judged more positively when a comparable other person has received a lower as opposed to a higher outcome. This indicates that when people compare different outcomes with each other contrast effects can be found. The current study has revealed that when people compare procedural and outcome information this also can yield contrast effects. More specifically, the findings reported here suggest that the effects of perceived procedural fairness depend on how people react toward the outcomes they have received. In this way, this research points out that procedure and outcome issues are interrelated. This may help to further the integration of the procedural and distributive justice domains.

The present findings have extended Stapel and Koomen's (2001a,b) interpretation/comparison model to the domain of organizational justice. The research findings presented here suggest that people in organizations may sometimes compare and contrast the outcomes they have received to the procedures they have

experienced. A result of this comparison process may be that contrast effects are found such that higher levels of procedural fairness lead to more negative, not more positive, reactions of people working in organizations. This suggests, for instance, that if employees involved in a reorganization process interpret both their procedural and outcome experiences as two fairness-related events, and if they judge these events to be comparable with each other, they may start to compare and contrast these two events with each other, and in some situations may therefore react more negatively, not more positively, following the experience of fair as opposed to unfair procedures. This may lead the employees to react more negatively toward the outcome of the reorganization process following fair rather than unfair reorganization procedures.

I hasten to say that, of course, care must be taken to generalize from the experimental findings presented in the current paper to organizational settings. Furthermore, it should be noted that in the experiment presented here, procedure and outcome were on comparable scales that both ranged from 0 to 20. This was important because comparability is a precondition before comparison–contrast effects can be found. As mentioned before, however, it is essential to vary different levels of comparability in future research. Furthermore, there is more to the notion of comparability than simply having procedural and outcome information on a similar metric, and future studies may want to explore this. Future research also may want to systematically investigate the role of uncertainty in assimilation and contrast effects in the organizational justice domain (cf. Van den Bos, 2001; Van den Bos & Lind, 2002). Although the psychological analysis of the fair process effect presented here may be generalizable to other social contexts and other experimental manipulations, and although the present paper has identified some important conditions in which reversals of the fair process effect may be found, future research may want to explore the boundary conditions of the effects reported here. What matters most, however, is that the present experiment suggests that particular effects may occur. This may stimulate future research to explore other conditions in which reversals of the fair process effect are (or are not) found.

As mentioned before, previous studies have shown other conditions under which reversals of the fair process effect can be found (see, e.g., Folger, 1977; Van den Bos et al., 1996, 1999; see also Gilliland, 1994; Ployhart & Ryan, 1997; Ployhart et al., 1999). According to my knowledge, however, the current research is the first to suggest that activating people's goals may lead them to compare procedure and outcome information and hence lead to reversals of fair process effects. More generally, the present research fits into recent lines of reasoning that argue that it is important to investigate the social-cognitive aspects of the psychology of organizational justice phenomena (Ambrose & Kulik, 2001; Van den Bos & Lind, 2002). The present findings suggest that primed mindsets may play an important role in the psychology of the fair process effect. I hope that this will stimulate researchers to further explore assimilation and contrast in organizational justice.

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Appendix. Behavioral descriptions presented and questions asked in interpretation and comparison goal conditions to prime participants' mindsets

Behavioral description	Interpretation goal condition	Comparison goal condition
1. Vicky is 16 years old and has a part-time job. She earns 7.50 Dutch guilders per hour	Describe briefly what kind of person Vicky is and in what kind of situation she finds herself	To what extent is this hourly wage good or bad, when you compare it to other part-time jobs (1 = very bad, 7 = very good)
2. After playing in the lottery for 15 years, Mr. De Vries wins the first prize: He receives 10 000 Dutch guilders	Describe briefly what kind of person Mr. De Vries is and in what kind of situation he finds himself	To what extent is this prize high or low, when you compare it to first prizes in other lotteries (1 = very low, 7 = very high)
3. Peter has recently graduated from university. In his first job, he makes 4000 Dutch guilders per month	Describe briefly what kind of person Peter is and in what kind of situation he finds himself	To what extent is this salary high or low, when you compare it to salaries of other first jobs (1 = very low, 7 = very high)
4. Mirjam buys new batteries for her walkman. She pays 6 Dutch guilders for 4 batteries	Describe briefly what kind of person Mirjam is and in what kind of situation she finds herself	To what extent are the batteries expensive or inexpensive, when you compare it to what you would pay for other batteries (1 = very inexpensive, 7 = very expensive)
5. Chris lives in lodgings. He pays 450 Dutch guilders for a room of 3 × 4 meters. The room is located just outside the center of Leiden	Describe briefly what kind of person Chris is and in what kind of situation he finds himself	To what extent is this rent high or low, when you compare it to your estimation of the mean rent for living in lodgings (1 = very low, 7 = very high)
6. Karin buys a bicycle with drum brakes. She pays 200 Dutch guilders for this bike	Describe briefly what kind of person Karin is and in what kind of situation she finds herself	Do you think this is a large or small amount of money, when you compare it to your estimation of the mean prize for bicycles (1 = very small, 7 = very large)
7. For years now, Jasper has a subscription to a music magazine. His annual fees are 150 Dutch guilders	Describe briefly what kind of person Jasper is and in what kind of situation he finds himself	To what extent is this cheap or costly, when you compare it to other magazines (1 = very cheap, 7 = very costly)

Appendix (*continued*)

Behavioral description	Interpretation goal condition	Comparison goal condition
8. At the market, the market vendor sells Kees a bag of apples for 4 guilders	Describe briefly what kind of person Kees is and in what kind of situation he finds himself	To what extent are the apples expensive or inexpensive, when you compare it to what you would pay for a bag of apples in a supermarket (1 = very inexpensive, 7 = very expensive)
9. For her birthday, Jacqueline gets film vouchers, worthy of 50 Dutch guilders, from her best friend	Describe briefly what kind of person Jacqueline is and in what kind of situation she finds herself	Do you think this is a big or a small present, when you compare it with the mean birthday present (1 = very small, 7 = very big)
10. At the end of the fall, Marijke has a D on her report for math. At the end of spring, her mark is a C	Describe briefly what kind of person Marijke is and in what kind of situation she finds herself	To what extent is this improvement large or small, when you compare it with other possible improvements (1 = very small, 7 = very large)
11. Sander does volunteer work at a home for the elderly. He receives a book token for 15 Dutch guilders for this	Describe briefly what kind of person Sander is and in what kind of situation he finds himself	To what extent is this a large or small reward, when you compare it with other volunteer work (1 = very small, 7 = very large)

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