

Toward Understanding the Psychology of Reactions to Perceived Fairness: The Role of Affect Intensity

Kees van den Bos,^{1,3} Marjolein Maas,¹ Ismintha E. Waldring,² and Gün R. Semin²

In social psychology it has been argued that the importance of justice cannot be overstated. In the present paper, we ask whether this indeed is the case and, more precisely, examine when fairness is an important determinant of human reactions and when it is less significant. To this end we explore what drives people's reactions to perceived fairness and argue that although social justice research has reported effects of fairness perceptions on people's affective feelings, a close examination of the literature shows that these reactions appear less frequently and less strong than one would expect. It is proposed here that this has to do with the neglect in the social psychology of justice of an important determinant of affective reactions: individuals' propensity to react strongly or mildly toward affect-related events. As hypothesized, findings of two empirical studies show that especially people high in affect intensity show strong affective reactions following the experience of outcome fairness (Study 1) and procedural fairness (Study 2). When affect intensity is low, however, weak or no fairness effects were found, suggesting that then fairness may not be an important issue. In the discussion it is thus argued that incorporating affect intensity into the justice literature may further insights into the psychology of reactions toward fairness.

KEY WORDS: affect; procedural justice; distributive justice; affect intensity.

The norms and values of fairness and justice play a crucial role in social settings and social behavior. Not surprisingly, therefore, the issue of social justice has received considerable attention in recent years (for reviews, see, e.g., Cropanzano and Greenberg, 1997; Folger and Cropanzano, 1998; Lind and Tyler, 1988). Social

¹Utrecht University, Utrecht, The Netherlands.

²Free University Amsterdam, Amsterdam, The Netherlands.

³To whom correspondence should be addressed at Department of Social and Organizational Psychology, Utrecht University, P.O. Box 80140, 3508 TC Utrecht, The Netherlands. E-mail: k.vandenbos@fss.uu.nl

psychologists have shown that when people feel they have experienced fair or unfair events this can have strong effects on their subsequent reactions (see, e.g., Brockner and Wiesenfeld, 1996; Folger and Cropanzano, 1998; Lind and Tyler, 1988; Tyler and Lind, 1992). For example, it has been shown that people who feel they have been treated fairly by their organization and by the people who work in the organization indicate higher levels of commitment to the organization and more extra-role citizenship behavior (see, e.g., Folger and Cropanzano, 1998; Folger and Konovsky, 1989; Korsgaard, Schweiger, and Sapienza, 1995; McFarlin and Sweeney, 1992). People who have been experiencing unfair treatment, on the other hand, are more likely to leave their jobs, show lower levels of commitment, and may even start behaving in antinormative ways (Greenberg, 1993, 1997; Greenberg and Lind, 2000).

These and other findings suggest that people's reactions to perceived fairness play a crucial role in social behavior. Folger (1984) has even noted that "the importance of justice cannot be overstated" (p. ix). In this paper, however, we ask whether this indeed is the case: Can the importance of justice really not be overstated? Or, to take a more social psychological perspective on this matter, when is fairness an important determinant of human reactions and when is it less significant? To this end we explore what drives people's reactions to perceived fairness.

An illustration of the effects that perceived fairness can have on people's reactions can be found in studies in which it is varied whether people receive an outcome that is either equal to the outcome of a comparable other person or that is worse than the outcome of the comparison other (e.g., Adams, 1965; Van den Bos, 1999). Results of these kinds of studies typically show that outcomes are judged to be more fair when one's own outcomes are equal to as opposed to worse than the other person's outcome. More important for the current purposes, findings have revealed fair outcome effects. For example, people are more inclined to try to resolve conflicts after having experienced fair as opposed to unfair outcomes (e.g., Folger and Cropanzano, 1998).

An alternative way to study people's reactions to perceived fairness is to vary that people either are or are not allowed an opportunity to voice their opinion about decisions to be made (e.g., Folger, Rosenfield, Grove, and Corkran, 1979; Van den Bos, Lind, Vermunt, and Wilke, 1997). These studies generally reveal that people judge a voice procedure to be more fair than a no-voice procedure. More interestingly, findings frequently show fair process effects. For instance, people who have experienced fair procedures are less likely to protest than those who have experienced unfair procedures (e.g., Lind and Tyler, 1988).

As argued convincingly by Weiss, Suckow, and Cropanzano (1999), Cropanzano, Weiss, Suckow, and Grandey (2000), and Krehbiel and Cropanzano (2000), while fairness perceptions predict a variety of important reactions in the workplace, a close examination of the literature shows that most of these reactions are either attitudinal or behavioral reactions (see also Tyler and Smith, 1998, for a

similar argument). Furthermore, these authors noted that although these types of reactions are important, of course, a third class of reactions appears somewhat less frequently: reactions on people's affective feelings. Exploring affective reactions is important because this may reveal that the psychology of fairness does not only incorporate cognitions (e.g., perceptions of fairness), attitudes (e.g., inclination to resolve conflicts), and behaviors (e.g., protest), but affect, emotion, and mood as well.⁴ In this paper, therefore, we will investigate people's affective reactions following the experience of fair and unfair events.

To be sure, the research literature has reported some effects of fairness perceptions on people's affective reactions. For example, research on moral transgression has shown that severe injustices can lead to strong affective reactions (e.g., Folger and Baron, 1996; Folger, Robinson, Dietz, Baron, and Mclean-Parks, 2001; Folger and Skarlicki, 1998; Haidt, 2001, in press; Mikula, Scherer, and Athenstaedt, 1998; Montada and Schneider, 1989; Rozin, Lowery, Imada, and Haidt, 1999). Related to this, studies have found that fair and unfair events can affect discrete emotions (Krehbiel and Cropanzano, 2000; Weiss et al., 1999) and our own research has found effects of fairness manipulations on general ratings of affect (Van den Bos, 2001a; Van den Bos and Miedema, 2000; Vermunt, Wit, Van den Bos, and Lind, 1996). Furthermore, affect and related concepts have been important in work on equity theory and experimental distributive justice (e.g., Adams, 1965), resentment has been an important criterion in relative deprivation theory (e.g., Crosby, 1976), and justice perceptions have been core elements in recent work on intergroup guilt (e.g., Doosje, Branscombe, Spears, and Manstead, 1998). However, unless transgressions of justice and morality are very severe (Folger et al., 2001; Folger and Baron, 1996; Folger and Skarlicki, 1998; Haidt, 2001, in press; Rozin et al., 1999) or discrete emotions are tapped (Krehbiel and Cropanzano, 2000; Weiss et al., 1999), it is our experience that it is not uncommon to find weak or no effects of experiences of fair and unfair events on affective reactions (cf. Cropanzano et al., 2000; Krehbiel and Cropanzano, 2000; Weiss et al., 1999). We propose here that this has to do with the neglect in the social psychology of justice of an important determinant of people's affective reactions.

The affect literature has revealed that people can react more strongly or more mildly toward affect-related events (e.g., Diener, Larsen, Levine, and Emmons, 1985). It has been shown that people differ consistently in the typical intensity of their affective responses (e.g., Larsen and Diener, 1987; Larsen, Diener, and Cropanzano, 1987; Larsen, Diener, and Emmons, 1986). When exposed to affect-eliciting events, certain individuals consistently manifest stronger or more

⁴Although distinctions have been made between the concepts of affect, emotion, and mood, in the present paper we are interested more in the similarities these concepts share, and—following Scherer (1984), Gross (1998), and Frijda (1988)—we use the label affect as the superordinate category for valenced stimuli, states, judgments, and behaviors, including emotions such as anger and sadness, moods such as depression and euphoria, and judgments on dimensions such as favorability and desirability.

intense affective responses whereas other persons show milder or less intense affective reactions. Larsen, Diener, and their colleagues have investigated this individual difference variable in both field and laboratory settings and showed that the affect intensity dimension appears to generalize over positive and negative affect domains (Larsen et al., 1987) and that individual differences in affect intensity are stable over time and consistent across situations (Larsen and Diener, 1987).

In the justice literature, there has been a controversy whether justice judgments should be thought of as subjective–affective constructs or as rational–cognitive concepts (see Haidt, 2001; Van den Bos, 2002). If the justice concept constitutes more of the former than of the latter, than it should be the case that individual differences in affect intensity should play an important moderating role in the psychology of people’s reactions toward fair and unfair events. Brockner et al. (1998) have argued that “relatively few studies have investigated the moderating role of theoretically derived, individual-difference variables” (p. 395; for an important exception, however, see the work by Schmitt and others, e.g., Schmitt, Eid, and Maes, 2003). We are arguing here that individuals’ propensity for affect intensity is an important determinant of how people react toward fair and unfair events and that incorporating the concept of affect intensity into the social justice literature may, therefore, substantially further scientists’ insights into people’s reactions to fairness. In this way, our approach is in line with a dynamic interactionist perspective (e.g., Schmitt et al., 2003; Snyder and Cantor, 1998), in which it is argued that the interaction between personalities and situations may inform scientists about the social aspects of the relations people encounter. That is, if different types of personalities determine reactions to fair and unfair events this may inform us about the nature of these events (see also Mischel, 1973). In this paper, we examine the role of affect intensity in people’s reactions to fair and unfair outcomes (Study 1) as well as fair and unfair procedures (Study 2).

STUDY 1

As argued in the general introduction, it is not uncommon to find weak or no effects on affective reactions following the experience of fair and unfair events. We therefore attempted to set up our studies in such a way that finding the predicted effects would be less unlikely: We used well-established experimental setups (Van den Bos, 1999; Van den Bos et al., 1997); setups that have been shown to have good levels of internal validity and experimental realism (Mook, 1983) and acceptable levels of ecological validity (Lind and Van den Bos, 2002; Van den Bos and Lind, 2002). Furthermore, in these studies we assessed affective reactions by means of a 16-item scale that has been specifically constructed to measure people’s affective reactions following the experience of fair and unfair events. Items of this scale

have been used repeatedly and successfully in recent fairness studies (e.g., Van den Bos, 2001a,b; Van den Bos and Lind, 2002; Van den Bos and Miedema, 2000; Van den Bos and Spruijt, 2002; Van den Bos and Van Prooijen, 2001) and pilot studies showed that, relative to other scales, this scale is better suited and more susceptible for finding effects on people's reactions following the experience of fair and unfair events.

After people's propensity for affect intensity had been assessed, they were informed that they received an outcome that was equal to the outcome of a comparable other person or that was worse than the outcome of the comparison other (cf. Adams, 1965; Van den Bos, 1999). Following this manipulation of outcome fairness, people's affective reactions were assessed. We expected that affect ratings would be more positive when people had received an outcome that was equal to as opposed to worse than the outcome of the comparable other person. More importantly, following the line of reasoning presented in the general introduction, we predicted this outcome effect to be stronger among people high in affect intensity than among those low in affect intensity.

Method

Participants and design. Students at the Free University Amsterdam were invited to participate in a study on human task performance. One hundred persons (48 men and 52 women) participated in the study and were paid for their participation. The design was a 2 (affect intensity: high vs. low) \times 2 (outcome: equal to other vs. worse than other) between-subjects design. Participants were paid 10 Dutch guilders for their participation (1 Dutch guilder equaled approximately U.S.\$0.40 at the time the studies in this paper were conducted).

Experimental procedure. Participants were seated in separate rooms, each of which contained a computer with a monitor and a keyboard, and were told that the computers were connected to one another and that the supervisor of the study 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.

The experiment was presented to the participants as two separate studies. In the first study, participants were asked to complete the Affect Intensity Measure (e.g., Larsen et al., 1986, 1987), a 40-item questionnaire that inquires about the strength of people's affective reactions to typical life situations. Examples of items are "When I accomplish something difficult I feel delighted or elated" and "When I am nervous I get shaky all over." Responses are given on 6-point scales (1 = *never*, 6 = *always*). The Affect Intensity Measure has been validated in previous studies (e.g., Larsen et al., 1986, 1987) and yielded a highly reliable scale in the current study ($\alpha = 0.89$). Following Larsen et al. (1987), median splits were used to

classify participants as high in affect intensity or low in affect intensity (Median = 3.71, SD = 0.49).

After this, the second study started. Here we used a similar setup successfully used in previous fairness studies (e.g., Van den Bos, 1999; Van den Bos et al., 1997) and that has been shown to combine high levels of internal validity and experimental realism with acceptable levels of external validity (Lind and Van den Bos, 2002; Van den Bos, 2001c; Van den Bos and Lind, 2002). In the first part of the instructions, participants were informed that they participated in the study with another person. The experimental procedure was then outlined to the participants: After the tasks that participants were to complete would be 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 a total of 200 lottery tickets would be divided among all participants. Furthermore, participants were told that after the work round the supervisor of the study would divide some lottery tickets between them and the other participant. Seven practice questions were posed to ensure comprehension of the lottery. If participants gave a wrong answer to a question, the correct answer was disclosed and main characteristics of the lottery were repeated.

The task was then explained to the participants. Figures would be presented on the upper right part of the computer screen. Each figure consisted of 36 squares, and each square showed one of eight distinct patterns. On the upper left side of the computer screen one of the eight patterns would be presented, and participants had to count the number of squares with this pattern in the figure on the right side of the screen. When participants had indicated the correct number of patterns in the figure on the right side of the screen, another figure and another pattern would be presented on the screen. In both the practice round and the work round, the number of tasks that the participant had completed (i.e., the number of figures that the participant had counted) in the present round would be presented on the lower right side of the screen. On the lower left side of the screen the time remaining in the present round was shown.

The practice round then began, after which the work round began. After the work round had ended, participants were told how many tasks they had completed in the work round, and—to try to ensure that participants compared themselves to the other participant—it was communicated to the participant that the other participant had completed an equivalent number of tasks. To assess whether participants thought of the other participant as a person who was comparable in the amounts of inputs he or she provided (cf. Van den Bos, 1999; Van den Bos et al., 1997), they

were asked to what extent the other participant had performed well in the work round relative to the performance of the participant self (1 = *much worse*, 4 = *equally*, 7 = *much better*) and to what extent the other participant did his/her best in the work round relative to the participant self (1 = *much worse*, 4 = *equally*, 7 = *much better*).

The outcome that participants received relative to the other participant was then varied: Following Van den Bos (1999; Van den Bos et al., 1997), it was communicated to the participants, by means of the computer network, that they received three lottery tickets. Participants in the equal-to-other condition were informed that the other participant received three tickets. Participants in the worse-than-other condition were informed that the other participant received six tickets. (In reality, however, all stimulus information was preprogrammed; a procedure to which none of the participants objected upon debriefing.)

This was followed by the assessment of the dependent variables and the manipulation checks. All ratings were made on 7-point scales. Main dependent variables were participants' affective reactions to experiences of fairness and unfairness, which were assessed by asking participants to respond to a 16-item scale that has been specifically constructed—on the basis of items successfully used in recent fairness studies (e.g., Van den Bos, 2001a,b; Van den Bos and Lind, 2002; Van den Bos and Miedema, 2000; Van den Bos and Spruijt, 2002; Van den Bos and Van Prooijen, 2001)—to measure people's affective reactions following the experience of fair and unfair events: Participants were asked to what extent they felt satisfied, happy, content, in a positive mood, proud, well, angry, furious, hostile, infuriated, in a negative mood, irritated, sad, disappointed, guilty, and bad. All answers were given on 7-point scales (1 = *very weak*, 7 = *very strong*). Positive and negative subscales of the scale typically are strongly inversely correlated (in this study: $r = -0.59$, $p < 0.001$) and therefore participants' ratings were averaged to form a reliable scale of affective reactions toward fairness of experience such that higher values denoting more positive ratings of affect ($\alpha = 0.75$).

To check for the manipulation of outcome, participants were asked to what extent they agreed with the statement that they received an equal number of tickets as the other participant (1 = *strongly disagree*, 7 = *strongly agree*) and to what extent they agree with the statement that they received less lottery tickets than the other participant (1 = *strongly disagree*, 7 = *strongly agree*). To further validate the manipulation of outcome, participants' outcome fairness judgments were solicited by asking participants how fair (1 = *very unfair*, 7 = *very fair*), just (1 = *very unjust*, 7 = *very just*), appropriate (1 = *very inappropriate*, 7 = *very appropriate*), and justified (1 = *very unjustified*, 7 = *very justified*) they considered their three lottery tickets. When the participants had answered these questions, they were thoroughly debriefed and paid for their participation.

Results

Manipulation checks. A two-way multivariate analysis of variance (MANOVA) on the two manipulation checks of outcome (the equal-to-other check and the worse-than-other check) yielded only a main effect of outcome at both the multivariate level and the univariate levels: multivariate $F(2, 95) = 79.59, p < 0.001$; for the equal-to-other check, $F(1, 96) = 137.89, p < 0.001$; for the worse-than-other check, $F(1, 96) = 130.07, p < 0.001$. Participants in the equal-to-other condition agreed more with the statement that their number of lottery tickets was equal to the number of tickets that the other participant received ($M = 6.46, SD = 1.07$) than participants in the worse-than-other condition ($M = 2.32, SD = 2.23$). Participants in the worse-than-other condition agreed more with the statement that they received less lottery tickets than the other participant ($M = 5.54, SD = 2.31$) compared with participants in the equal-to-other condition ($M = 1.36, SD = 1.17$). This indicates that outcome was successfully operationalized.

Similarly, participants' outcome fairness judgments (outcome fairness, justice, appropriateness, and justification) yielded only a main effect of outcome at both the multivariate level and the univariate levels: multivariate $F(4, 93) = 81.38, p < 0.001$; for fairness judgments, $F(1, 96) = 320.07, p < 0.001$; for justice judgments, $F(1, 96) = 288.29, p < 0.001$; for appropriateness judgments, $F(1, 96) = 295.38, p < 0.001$; for justification judgments, $F(1, 96) = 272.41, p < 0.001$. As expected, participants who had received an outcome that was equal to the other participant judged their outcome to be more fair ($M = 6.02, SD = 1.19$), just ($M = 6.04, SD = 1.16$), appropriate ($M = 5.94, SD = 1.20$), and justified ($M = 5.88, SD = 1.35$) than participants who received an outcome that was worse than the other participant's outcome (M s = 1.90, 2.04, 1.94, and 1.92, SD s = 1.09, 1.18, 1.11, and 1.01, respectively). This yields corroborative evidence that the manipulation of outcome was perceived as intended.

Comparability measures. As expected, participants' comparability judgments yielded no significant effects at both the multivariate level and the univariate levels. Participants indicated that the other participant had performed equally well ($M = 3.93, SD = 0.57$) and was equally good in performing the tasks ($M = 4.02, SD = 0.49$). This shows that, as expected, participants thought of the other person as a comparable person with respect to the tasks that were completed in the study (cf. Van den Bos, 1999; Van den Bos, Lind, et al., 1997).

Dependent variable. Main dependent variable was the scale of participants' affective reactions. We first performed a regression analysis on this dependent variable to test for the predicted interaction effect between the centered (Aiken and West, 1991) continuous affect intensity measure and the outcome manipulation (dummy coded). As predicted, this yielded only two effects: a significant main effect of outcome, $\beta = -0.50, p < 0.001$, and a significant interaction effect, $\beta = -0.19, p < 0.04$. To test whether these effects corresponded with our predictions (stronger effects of the outcome manipulation among participants high in affect

Table 1. Mean Affective Ratings, Standard Deviations, and Number of Participants as a Function of Affect Intensity and Outcome (Study 1)

Outcome	Affect intensity					
	Low			High		
	<i>M</i>	SD	<i>n</i>	<i>M</i>	SD	<i>n</i>
Equal to other	5.41	0.76	25	5.51	1.01	25
Worse than other	4.59	1.19	25	3.82	1.29	25

Note. Means are on 7-point scales, with higher values indicating more positive ratings of affect.

intensity than among those low in affect intensity), we had to calculate whether the effects of the outcome manipulation were stronger among those high in affect intensity than among those low in affect intensity. We calculated these simple main effects of outcome in an ANOVA with the dichotomized affect intensity variable and the outcome manipulation as independent variables.⁵ As expected, the ANOVA yielded only two effects: a main effect of outcome, $F(1, 96) = 33.73, p < 0.001$, and a significant interaction effect, $F(1, 96) = 4.02, p < 0.05$. The main effect of outcome showed that affect ratings were more positive when participants received an outcome that was equal to the outcome of the comparable other participant than when their outcome was worse than the other’s outcome. More interestingly, this effect was qualified by the interaction effect: As hypothesized, simple main effects revealed that the effect of outcome was indeed stronger among participants high in affect intensity, $F(1, 98) = 28.31, p < 0.001, \eta^2 = 0.22$, than among those low in affect intensity, $F(1, 98) = 5.49, p < 0.03, \eta^2 = 0.05$. Table 1 shows the means, standard deviations, and number of participants in each cell.

Finally, it can be noted here that participants’ scores on the continuous affect intensity measure did not significantly influence their affect ratings within the equal-to-other outcome conditions, $\beta = 0.08, ns$, but did significantly influence affect ratings within the worse-than-other outcome conditions, $\beta = -0.35, p < 0.02$. We will come back to this in the General Discussion.

Discussion

As expected, it was found in Study 1 that especially people high in affect intensity show strong affective reactions following the experience of outcome

⁵Please note that our hypothesis predicted stronger effects of the outcome manipulation among those high in affect intensity than among those low in affect intensity, and *not* that the effects of affect intensity would depend on particular levels of the outcome manipulation. Therefore, in order to test our hypothesis precisely, it was important to calculate the effects of the outcome manipulation within those high in affect intensity and within those low in affect intensity. We calculated these simple main effects in the ANOVA procedure. Additionally, we will present the effects of affect intensity as a function of the outcome conditions after the ANOVA and simple main effects results have been presented.

fairness. These are important findings because, as far as we know, they are the first to show the moderating effects of individuals' propensity for affect intensity on affective reactions to experiences of fairness. Before strong conclusions on the basis of these results were drawn, however, a second study was conducted.

STUDY 2

Because there are a number of different fairness constructs, it was important to show that similar results can emerge across operationalizations. In Study 2, therefore, the fairness manipulation consisted of the most generally accepted and best-documented manipulation in procedural justice studies (Brockner et al., 1998; Folger, 1977; Folger et al., 1979; Van den Bos et al., 1997; Van den Bos and Miedema, 2000). Participants either received or did not receive an opportunity to voice their opinion about a decision. Before this manipulation of procedural fairness, participants' propensity for affect intensity was measured, and following the manipulation of procedural fairness, participants' affective reactions were assessed. We predicted that affect ratings would be more positive when people had received an opportunity to voice their opinion than when they had not received such an opportunity. More interestingly, we hypothesized this procedure effect to be stronger among people high in affect intensity than among those low in affect intensity.

Method

Participants and design. Eighty-five students (16 men and 69 women) at the Free University Amsterdam participated in the study and were paid for their participation. The design was a 2 (affect intensity: high vs. low) \times 2 (procedure: voice vs. no voice) between-subjects design. Participants were paid 10 Dutch guilders for their participation.

Experimental procedure. The experimental procedure was the same as in Study 1, except for the below-mentioned points. This time the Affect Intensity Measure yielded an alpha of 0.90. Following Larsen et al. (1986, 1987), median splits were used to classify participants as high in affect intensity or low in affect intensity (Median = 3.88, SD = 0.51).

After participants had completed the practice and work rounds, they were asked the same comparability questions that were measured in Study 1. This was followed by the manipulation of procedure. In the voice condition, the supervisor of the study allegedly asked participants, by means of the computer network, to type in their opinion about the percentage of tickets that they should receive relative to the other participant. Participants in the no-voice condition were informed that they would not be asked to type their opinion about the percentage of tickets that they

should receive relative to the other participant. (In reality, however, all stimulus information was preprogrammed; an experimental procedure to which none of the participants objected upon debriefing.)

This was followed by the assessment of the dependent variables and the manipulation checks. Main dependent variable was the same 16-item scale of affective reactions toward fairness of experience that was used in Study 1 ($\alpha = 0.74$). Following previous procedural fairness studies, the manipulation of procedure was checked by asking participants whether they thought they had received an opportunity to voice their opinion about the percentage of tickets that they should receive relative to the other participant (1 = *strongly disagree*, 7 = *strongly agree*) and to what extent they thought they had received an opportunity to voice their opinion about the percentage of tickets that they should receive relative to the other participant (1 = *very weak*, 7 = *very strong*). To further validate the manipulation of procedure, participants' procedural fairness judgments were assessed by asking participants how fair (1 = *very unfair*, 7 = *very fair*), just (1 = *very unjust*, 7 = *very just*), appropriate (1 = *very inappropriate*, 7 = *very appropriate*), and justified (1 = *very unjustified*, 7 = *very justified*) they considered the way in which they had been treated. When the participants had answered these questions, they were thoroughly debriefed and paid for their participation.

Results

Manipulation checks. A two-way MANOVA on the two manipulation checks of procedure yielded only a main effect of procedure at the multivariate level, $F(2, 80) = 543.28, p < 0.001$. Similarly, univariate analyses showed only a main effect of procedure: Participants in the voice condition agreed more with the statement that they had received an opportunity to voice their opinion ($M = 6.42, SD = 0.93$) than participants in the no-voice condition ($M = 1.31, SD = 0.52$), $F(1, 81) = 961.26, p < 0.001$, and participants in the voice condition felt more strongly that they had received an opportunity to voice their opinion ($M = 6.05, SD = 0.98$) than those in the no-voice condition ($M = 1.19, SD = 0.46$), $F(1, 81) = 837.88, p < 0.001$. This indicates that procedure was successfully operationalized.

Similarly, participants' procedural fairness judgments (procedural fairness, justice, appropriateness, and justification) yielded only a main effect of procedure at both the multivariate level and the univariate levels: multivariate $F(4, 78) = 32.39, p < 0.001$; for fairness judgments, $F(1, 81) = 90.39, p < 0.001$; for justice judgments, $F(1, 81) = 127.72, p < 0.001$; for appropriateness judgments, $F(1, 81) = 76.94, p < 0.001$; for justification judgments, $F(1, 81) = 92.26, p < 0.001$. As expected, participants who had received an opportunity to voice their opinion judged their procedure to be more fair ($M = 5.56, SD = 0.98$), just ($M = 5.61, SD = 0.76$), appropriate ($M = 5.37, SD = 0.95$), and justified ($M = 5.44, SD = 0.85$) than those who received no such opportunity ($M_s = 2.95, 2.92, 3.07,$

and 2.93, SDs = 1.48, 1.35, 1.42, and 1.47, respectively). This shows 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.

Comparability measures. As expected, participants' comparability judgments yielded no significant effects at both the multivariate level and the univariate levels. Participants indicated that the other participant had performed equally well ($M = 3.98$, $SD = 0.34$) and was equally good in performing the tasks ($M = 3.97$, $SD = 0.45$). This shows that, as expected, participants thought of the other person as a comparable person with respect to the tasks that were completed in the study.

Percentage findings. Participants who were allowed voice ($n = 43$) typed in their opinion about the percentage tickets that they should receive relative to the other participant. An ANOVA yielded no significant effect of affect intensity. Inspection of the means indicated that participants typed in that the lottery tickets should be divided equally between themselves and the other participant: Forty of the participants answered that they should get 50% of the tickets, and the mean percentage ($M = 50.11\%$, $SD = 2.31$) did not differ from 50%. These findings are supportive of equity theory: Participants preferred to divide outcomes equally between themselves and the other participant (who contributed an equal amount of inputs, and who hence deserved—according to equity theory—to receive the same amount of outputs as the participants themselves).

Dependent variable. Main dependent variable was the scale of participants' affective reactions. We first performed a regression analysis to test for the predicted interaction effect between the centered continuous affect intensity measure and the procedure manipulation (dummy coded). As hypothesized, this yielded only two effects: a main effect of procedure, $\beta = -0.34$, $p < 0.01$, and a significant interaction effect, $\beta = -0.36$, $p < 0.001$. To test whether these effects were in accordance with our predictions (stronger effects of the procedure manipulation among participants high in affect intensity than among those low in affect intensity), we had to calculate whether the effects of the procedure manipulation were stronger among those high in affect intensity than among those low in affect intensity. We calculated these simple main effects of procedure in an ANOVA with the dichotomized affect intensity variable and the procedure manipulation as independent variables. As expected, the ANOVA yielded only two effects: a main effect of procedure, $F(1, 81) = 11.00$, $p < 0.01$, and a significant interaction effect, $F(1, 81) = 8.37$, $p < 0.01$. The main effect of procedure showed that affect ratings were more positive when participants had received an opportunity to voice their opinion than when they had not received such an opportunity. More interestingly, this effect was qualified by the interaction effect: As hypothesized, simple main effects revealed that the effect of procedure was stronger among participants high in affect intensity than among participants low in affect intensity. In fact, the procedure effect was statistically significant among participants high in affect intensity, $F(1, 83) = 19.91$, $p < 0.001$,

Table 2. Mean Affective Ratings, Standard Deviations, and Number of Participants as a Function of Affect Intensity and Procedure (Study 2)

Procedure	Affect intensity					
	Low			High		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Voice	5.44	0.64	20	5.90	0.36	23
No voice	5.37	0.96	22	4.85	0.99	20

Note. Means are on 7-point scales, with higher values indicating more positive ratings of affect.

and was not statistically significant among those low in affect intensity, $F < 1$. Table 2 shows the means, standard deviations, and number of participants in each cell.

It can also be noted here that participants' scores on the continuous affect intensity measure significantly influenced their affect ratings within both the voice conditions, $\beta = 0.34, p < 0.03$, and the no-voice conditions, $\beta = -0.45, p < 0.01$. We return to this below.

Discussion

As hypothesized, we found in Study 2 that especially people high in affect intensity show strong affective reactions following the experience of procedural fairness. Thus, together with the results of Study 1, the present paper reveals that affect intensity moderates people's affective reactions to experiences of fairness. Furthermore, the studies reported here have shown that affect intensity can play its moderating role on people's reactions to both outcome fairness (Study 1) and procedural fairness (Study 2).

GENERAL DISCUSSION

The findings of the studies presented in this paper show that affective reactions following fair and unfair events are moderated by people's propensity to react strongly or mildly toward affect-eliciting events. Conducting two studies was important because, although the studies differ to some extent, both yielded similar results, helping to establish the robustness of the role of affect intensity in reactions to fairness. Both studies that are reported here converge on the same point that it is more likely that people high in affect intensity will show strong affective reactions following the experience of fair and unfair events whereas those low in affect intensity are more likely to show weaker affective reactions. These findings are

important because they help to further social psychologists' understanding of the fact that affective reactions tend to appear less frequently and less strong than one would expect (Cropanzano et al., 2000; Krehbiel and Cropanzano, 2000; Weiss et al., 1999). The current findings specify when strong affective reactions are more likely and when these reactions are less likely, and thus show that incorporating affect intensity into the social justice literature may substantially further insights into people's reactions toward fairness. In fact, results suggest that there is a good chance that in the case of low affect intensity weak or no effects of perceived fairness on people's reactions are to be found. This suggests that when affect intensity is low, fairness—of which Folger (1984) argued that the importance of it cannot be overstated—is in fact not so important.

A close inspection of the findings reported in this paper shows that in Study 2 individual differences in affect intensity significantly influenced affective reactions within both the fair and unfair procedure conditions, indicating that individuals' propensity for affect intensity can affect reactions to both fair and unfair events. In Study 1, affect intensity significantly influenced affective reactions within the unfair outcome conditions and not significantly within the fair outcome conditions. Perhaps these differences have to do with the different constructs of fairness that were explored here, with procedural fairness being more susceptible to the moderating role of affect intensity on affective reactions than distributive fairness. It should be noted here, however, that in both Studies 1 and 2, affect intensity was more strongly associated with people's affective reactions within the unfair conditions ($r_s = -0.35$ and -0.45 , respectively) than within the fair conditions ($r_s = 0.08$ and 0.34 , respectively). This is in correspondence with notions ventilated in the social justice literature that whereas we, scientists, tend to think and talk about the psychology of justice, unjust events affect lay people's cognitions and reactions stronger than just events (e.g., Brockner and Wiesenfeld, 1996; Van den Bos et al., 1997), suggesting that *injustice* plays an even more prominent role than justice and that it might be more accurate to talk about the psychology of *injustice* as opposed to justice (Folger, 1984; Folger and Cropanzano, 1998). Furthermore, it is worthwhile to note here that there are other areas of research within psychology (e.g., person perception) where negative information has been found to have more impact on people's reactions than positive information (e.g., Skowronski and Carlston, 1989). Future research on social justice and injustice may profit from insights developed in these other areas of psychology.

An interesting aspect of the findings of Studies 1 and 2 is that they both show strong interaction effects of affect intensity and fairness manipulations on people's affective reactions, but do not show interactions on fairness judgments. This suggests that perceptions of fairness and justice are not influenced by individual differences in affect intensity, but that subsequent affective reactions to the perception of fairness or unfairness are strongly influenced by affect intensity. This emphasizes that it is important to distinguish perceptions of fairness from

reactions following these perceptions. It is our impression that this subtle but important distinction sometimes tends to be missed in the social psychological literature on justice.

In the studies presented here we did not distinguish between positive and negative affective reactions because we have found in our research that positive and negative affective reactions to experiences of fairness are strongly inversely correlated (e.g., Van den Bos, 2001a,b; Van den Bos and Lind, 2002; Van den Bos and Miedema, 2000; Van den Bos and Spruijt, 2002; Van den Bos and Van Prooijen, 2001). Thus, although other research areas—outside the justice domain—have found strong differences between positive and negative affect, it was more meaningful in the fairness studies presented here to study people's combined affective reactions toward experiences of fairness. Our findings have shown that on these combined affective reactions strong interaction effects of affect intensity and experiences of fairness could be found, indicating that the scale we used here to measure affective feelings following fairness experiences was adequate.

Because it is not uncommon to find weak effects on affective reactions following the experience of fair and unfair events, we tried to set up our studies in such a way that this would enhance the likelihood of finding the predicted effects. We therefore reasoned that it made sense to use well-established experimental setups that have been shown to have good levels of internal validity and experimental realism and acceptable levels of ecological validity (Lind and Van den Bos, 2002; Van den Bos, 1999; Van den Bos et al., 1997; Van den Bos and Lind, 2002). One way we tried to enhance ecological validity and experimental realism was to use stimulus materials that had real-life characteristics and that were important for our participants (and debriefing interviews indicated that we were successful in this). An advantage of the research methods we used here was that they provided us with a high degree of control in setting up the kinds of situations we thought were needed in this stage to successfully investigate affective reactions to fair and unfair events. The findings that were presented here indeed do show the predicted effects of affect intensity and fairness experiences on affective reactions.

Care must be taken, however, to generalize from the findings presented here to other settings. Although we think it is reasonable to propose that our analysis of the role of affect intensity in people's reactions to fairness experiences is generalizable to other social contexts and operationalizations, future research may want to explore the generalizability of the effects reported here. However, the studies presented here do show that particular effects may occur and do reveal the important role that affect intensity may play in the psychology of affective reactions to fair and unfair events. This may stimulate future research to explore other operationalizations and other research methods in other research settings. As research accumulates concerning the antecedents of people's reactions to fair and unfair events, as it has in this study and in other studies (see, e.g., Brockner, Grover, Reed, DeWitt, and O'Malley, 1987; Folger et al., 1979; Krehbiel and Cropanzano,

2000; Lind, Kanfer, and Earley, 1990; Tyler, 1990; Weiss et al., 1999), we begin to understand not only when reactions to experiences of fairness appear or disappear, but also a great deal about why they occur at all and why they can be so potent when they do occur. This knowledge in turn promises to advance our understanding of the psychology of justice and of the role of justice-related phenomena in social relations.

But, to return to the concept that motivated the research we report here, the present paper fits into recent attempts to start exploring the role of affect in social justice processes. Previous research suggested that moral transgressions can lead people to show affective responses (e.g., Folger et al., 2001; Folger and Baron, 1996; Folger and Skarlicki, 1998; Haidt, 2001, in press; Rozin et al., 1999) and that fairness perceptions can influence discrete emotions (e.g., Krehbiel and Cropanzano, 2000; Weiss et al., 1999). By revealing that individuals' propensity for affect intensity is an important determinant of how people react toward fair and unfair events, the research presented in the current paper corroborates and extends these previous studies as well as earlier research on affect intensity (e.g., Larsen et al., 1986, 1987). Thinking of justice as an affect-related construct is important and may help to eventually better understand the controversy between conceiving of justice judgments as subjective–affective concepts vs. as rational–cognitive constructs (see Haidt, 2001; Van den Bos, 2002). The dynamic interactionist approach used here (cf. Schmitt et al., 2003; Snyder and Cantor, 1998) indicates that justice is an important issue but not for all people and hence that the importance of justice *can* be overstated (cf. Folger, 1984). All this suggests that incorporating the concept of affect intensity into the social psychological literature on justice substantially furthers insights into people's affective reactions toward fairness.

REFERENCES

- Adams, J. S. (1965). Inequity in social exchange. In: Berkowitz, L. (ed.), *Advances in Experimental Social Psychology* (Vol. 2), Academic Press, New York, pp. 267–299.
- Aiken, L. S., and West, S. G. (1991). *Multiple Regression: Testing and Interpreting Interactions*, Sage, Newbury Park, CA.
- Brockner, J., and Wiesenfeld, B. M. (1996). An integrative framework for explaining reactions to decisions: Interactive effects of outcomes and procedures. *Psychol. Bull.* **120**: 189–208.
- Brockner, J., Grover, S., Reed, T., DeWitt, R., and O'Malley, M. (1987). Survivors reactions to layoffs: We get by with a little help from our friends. *Adm. Sci. Q.* **32**: 526–541.
- Brockner, J., Heuer, L., Siegel, P. A., Wiesenfeld, B., Martin, C., Grover, S., et al. (1998). The moderating effect of self-esteem in reaction to voice: Converging evidence from five studies. *J. Pers. Soc. Psychol.* **75**: 394–407.
- Cropanzano, R., and Greenberg, J. (1997). Progress in organizational justice: Tunneling through the maze. In: Cooper, C. L., and Robertson, I. T. (eds.), *International Review of Industrial and Organizational Psychology*, Wiley, New York, pp. 317–372.
- Cropanzano, R., Weiss, H. M., Suckow, K., and Grandey, A. A. (2000). Doing justice to workplace emotions. In: Ashkanasy, N., Hartel, C., and Zerbe, W. (eds.), *Emotions at Work*, Quorum, Westport, CT, pp. 49–62.

- Crosby, F. (1976). A model of egoistical relative deprivation. *Psychol. Rev.* **83**: 85–112.
- Diener, E., Larsen, R. J., Levine, S., and Emmons, R. A. (1985). Intensity and frequency: Dimensions underlying positive and negative affect. *J. Pers. Soc. Psychol.* **48**: 1253–1265.
- Doosje, B., Branscombe, N. R., Spears, R., and Manstead, A. S. R. (1998). Guilty by association: When one's group has a negative history. *J. Pers. Soc. Psychol.* **75**: 872–886.
- Folger, R. (1977). Distributive and procedural justice: Combined impact of “voice” and improvement of experienced inequity. *J. Pers. Soc. Psychol.* **35**: 108–119.
- Folger, R. (ed.) (1984). *The Sense of Injustice: Social Psychological Perspectives*, Plenum, New York.
- Folger, R., and Baron, R. A. (1996). Violence and hostility at work: A model of reactions to perceived injustice. In: VandenBos, G. R., and Bulatao, E. Q. (eds.), *Violence on the Job: Identifying Risks and Developing Solutions*, American Psychological Association, Washington, DC, pp. 51–85.
- Folger, R., and Cropanzano, R. (1998). *Organizational Justice and Human Resource Management*, Sage, Thousand Oaks, CA.
- Folger, R., and Konovsky, M. (1989). Effects of procedural and distributive justice on reactions to pay raise decisions. *Acad. Manage. J.* **32**: 115–130.
- Folger, R., and Skarlicki, D. P. (1998). When tough times make tough bosses: Managerial distancing as a function of layoff blame. *Acad. Manage. J.* **41**: 79–87.
- Folger, R., Rosenfield, D., Grove, J., and Corkran, L. (1979). Effects of “voice” and peer opinions on responses to inequity. *J. Pers. Soc. Psychol.* **37**: 2253–2261.
- Folger, R., Robinson, S. L., Dietz, J., Baron, R. A., and McLean-Parks, J. (2001). *When Colleagues Become Violent: Employee Threats and Assaults as a Function of Societal Violence and Organizational Injustice*. Manuscript submitted for publication.
- Frijda, N. H. (1988). The laws of emotion. *Am. Psychol.* **4**: 349–358.
- Greenberg, J. (1993). Stealing in the name of justice: Informational and interpersonal moderators of theft reactions to underpayment inequity. *Organ. Behav. Hum. Decis. Process.* **54**: 81–103.
- Greenberg, J. (1997). A social influence model of employee theft: Beyond the fraud triangle. In: Lewicki, R. J., Bies, R. J., and Sheppard, B. H. (eds.), *Research on Negotiation in Organizations* (Vol. 6), JAI Press, Greenwich, CT, pp. 29–52.
- Greenberg, J., and Lind, E. A. (2000). The pursuit of organizational justice: From conceptualization to implication to application. In: Cooper, C. L., and Locke, E. A. (eds.), *I/O Psychology: What We Know About Theory and Practice*, Blackwell, Oxford, England, pp. 72–105.
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Rev. Gen. Psychol.* **3**: 271–299.
- Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychol. Rev.* **108**: 814–834.
- Haidt, J. (2003). The moral emotions. In: Davidson, R. J., Scherer, K., and Goldsmith, H. H. (eds.), *Handbook of Affective Sciences*, Oxford University Press, Oxford, UK, pp. 852–870.
- Korsgaard, M. A., Schweiger, D. M., and Sapienza, H. J. (1995). Building commitment, attachment, and trust in strategic decision-making teams: The role of procedural justice. *Acad. Manage. J.* **38**: 60–84.
- Krehbiel, P. J., and Cropanzano, R. (2000). Procedural justice, outcome favorability and emotion. *Soc. Justice Res.* **13**: 339–360.
- Larsen, R. J., and Diener, E. (1987). Affect intensity as an individual difference characteristic: A review. *J. Res. Pers.* **21**: 1–39.
- Larsen, R. J., Diener, E., and Emmons, R. (1986). Affect intensity and reactions to daily life events. *J. Pers. Soc. Psychol.* **51**: 803–814.
- Larsen, R. J., Diener, E., and Cropanzano, R. S. (1987). Cognitive operations associated with individual differences in affect intensity. *J. Pers. Soc. Psychol.* **53**: 767–774.
- Lind, E. A., and Tyler, T. R. (1988). *The Social Psychology of Procedural Justice*, Plenum, New York.
- Lind, E. A., and Van den Bos, K. (2002). When fairness works: Toward a general theory of uncertainty management. In: Staw, B. M., and Kramer, R. M. (eds.), *Research in Organizational Behavior* (Vol. 24), JAI Press, Greenwich, CT, pp. 181–223.
- Lind, E. A., Kanfer, R., and Earley, P. C. (1990). Voice, control, and procedural justice: Instrumental and noninstrumental concerns in fairness judgments. *J. Pers. Soc. Psychol.* **59**: 952–959.
- McFarlin, D. B., and Sweeney, P. D. (1992). Distributive and procedural justice as predictors of satisfaction with personal and organizational outcomes. *Acad. Manage. J.* **35**: 626–637.

- Mikula, G., Scherer, K. R., and Athenstaedt, U. (1998). The role of injustice in the elicitation of differential emotional reactions. *Pers. Soc. Psychol. Bull.* **24**: 769–783.
- Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychol. Rev.* **80**: 252–283.
- Montada, L., and Schneider, A. (1989). Justice and emotional reactions to the disadvantaged. *Soc. Justice Res.* **10**: 333–353.
- Mook, D. G. (1983). In defense of external invalidity. *Am. Psychol.* **38**: 379–387.
- Rozin, P., Lowery, L., Imada, S., and Haidt, J. (1999). The CAD triad hypothesis: A mapping between three moral emotions (contempt, anger, disgust) and three moral codes (community, autonomy, divinity). *J. Pers. Soc. Psychol.* **76**: 574–586.
- Scherer, K. R. (1984). On the nature and function of emotion: A component process approach. In: Scherer, K. R., and Ekman, P. (eds.), *Approaches to Emotion*, Erlbaum, Hillsdale, NJ, pp. 293–318.
- Schmitt, M., Eid, M., and Maes, J. (2003). Synergistic person \times situation interaction in distributive justice behavior. *Pers. Soc. Psychol. Bull.* **29**: 141–147.
- Skowronski, J. J., and Carlston, D. E. (1989). Negativity and extremity biases in impression formation: A review of explanations. *Psychol. Bull.* **105**: 131–142.
- Snyder, M., and Cantor, N. (1998). Understanding personality and social behavior: A functionalist strategy. In: Gilbert, D., Fiske, S. T., and Lindzey, G. (eds.), *Handbook of Social Psychology* (4th Ed., Vol. 1), McGraw-Hill, Boston, MA, pp. 635–679.
- Tyler, T. R. (1990). *Why Do People Obey the Law? Procedural Justice, Legitimacy, and Compliance*, Yale University Press, New Haven, CT.
- Tyler, T. R., and Lind, E. A. (1992). A relational model of authority in groups. In: Zanna, M. P. (ed.), *Advances in Experimental Social Psychology* (Vol. 25), Academic Press, San Diego, CA, pp. 115–191.
- Tyler, T. R., and Smith, H. J. (1998). Social justice and social movements. In: Gilbert, D., Fiske, S. T., and Lindzey, G. (eds.), *Handbook of Social Psychology* (4th Ed., Vol. 2), McGraw-Hill, Boston, MA, pp. 595–629.
- Van den Bos, K. (1999). What are we talking about when we talk about no-voice procedures? On the psychology of the fair outcome effect. *J. Exp. Soc. Psychol.* **35**: 560–577.
- Van den Bos, K. (2001a). Uncertainty management: The influence of uncertainty salience on reactions to perceived procedural fairness. *J. Pers. Soc. Psychol.* **80**: 931–941.
- Van den Bos, K. (2001b). Reactions to perceived fairness: The impact of mortality salience and self-esteem on ratings of negative affect. *Soc. Justice Res.* **14**: 1–23.
- Van den Bos, K. (2001c). Fundamental research by means of laboratory experiments is essential for a better understanding of organizational justice. *J. Vocat. Behav.* **58**: 254–259.
- Van den Bos, K. (in press). On the subjective quality of social justice: The role of affect as information in the psychology of justice judgments. *Journal of Personality and Social Psychology*.
- Van den Bos, K., and Lind, E. A. (2002). Uncertainty management by means of fairness judgments. In: Zanna, M. P. (ed.), *Advances in Experimental Social Psychology* (Vol. 34), Academic Press, San Diego, CA, pp. 1–60.
- Van den Bos, K., and Miedema, J. (2000). Toward understanding why fairness matters: The influence of mortality salience on reactions to procedural fairness. *J. Pers. Soc. Psychol.* **79**: 355–366.
- Van den Bos, K., and Spruijt, N. (2002). Appropriateness of decisions as a moderator of the psychology of voice. *Eur. J. Soc. Psychol.* **32**: 57–72.
- Van den Bos, K., and Van Prooijen, J.-W. (2001). Referent cognitions theory: The role of closeness of reference points in the psychology of voice. *J. Pers. Soc. Psychol.* **81**: 616–626.
- Van den Bos, K., Lind, E. A., Vermunt, R., and Wilke, H. A. M. (1997). How do I judge my outcome when I do not know the outcome of others? The psychology of the fair process effect. *J. Pers. Soc. Psychol.* **72**: 1034–1046.
- Vermunt, R., Wit, A., Van den Bos, K., and Lind, A. (1996). The effect of inaccurate procedure on protest: The mediating role of perceived unfairness and situational self-esteem. *Soc. Justice Res.* **9**: 109–119.
- Weiss, H. M., Suckow, K., and Cropanzano, R. (1999). Effects of justice conditions on discrete emotions. *J. Appl. Psychol.* **84**: 786–794.