

## On the Subjective Quality of Social Justice: The Role of Affect as Information in the Psychology of Justice Judgments

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This article argues that it is not uncommon for people forming justice judgments to lack information that is most relevant in the particular situation. In information-uncertain conditions, people may therefore construct justice judgments by relying on how they feel about the events they have encountered, and justice judgments may hence be strongly influenced by affect information. Findings show that in information-uncertain conditions, the affective states that people had been in prior and unrelated to the justice event indeed strongly influenced their justice judgments. These findings thus reveal that in situations of information uncertainty, people's judgments of justice can be very subjective, susceptible to affective states that have no logical relationship with the justice judgments they are constructing. Implications for the social psychology of justice and the literature on social cognition and affect are discussed.

Social justice is an important matter in courts of law (Lind, Kulik, Ambrose, & De Vera Park, 1993), politics (Tyler, Rasinski, & McGraw, 1985), societies at large (Rawls, 1971), organizations (Cropanzano & Greenberg, 1997), economic transactions (Kahneman, Knetsch, & Thaler, 1986), intimate relationships (M. J. Lerner & Mikula, 1994), and other important domains of social life. It is therefore not surprising that the issue of social justice has received considerable attention from philosophers, legal scholars, political scientists, sociologists, economists, and psychologists, among others (for an overview, see Cohen, 1986).

Over the last 25 years the bulk of work on the social psychology of justice has focused on establishing empirically the consequences of just or unjust treatment (for reviews see, e.g., Brockner & Wiesenfeld, 1996; Folger & Cropanzano, 1998; Lind & Tyler, 1988; Tyler & Lind, 1992; Tyler & Smith, 1998). For example, it has been shown that the belief that one has been justly treated by judges, the police, organizational managers, or other social authorities enhances acceptance of legal decisions (Lind et al., 1993), obedience to laws (Tyler, 1990), and evaluations of public policies (Tyler et al., 1985), whereas the belief that one has been treated in an unjust manner has been shown to prompt antisocial behavior (Greenberg, 1997), recidivism among spouse abuse defendants (Paternoster, Brame, Bachman, & Sherman, 1997), and the initiation of lawsuits (Lind, Greenberg, Scott, & Welchans, 2000). These empirical investigations have been very important because as a result, social psychologists know quite a lot about what the

effects of social justice are. However, these advances may have been achieved at the expense of deeper insights into what may be thought of as one of the most fundamental topics in the psychology of social justice: how justice judgments are formed (Ambrose & Kulik, 2001; Van den Bos & Lind, 2002). Because justice judgments influence so many important attitudes and behaviors, studying how people form judgments of justice is a crucial issue for understanding how humans think, feel, and behave in their social environments (Cropanzano & Folger, 1989, 1991; Cropanzano & Greenberg, 1997; Folger & Konovsky, 1989; Greenberg, 1990). In this article, the psychology of justice judgments is the primary focus of attention.

In their review of the psychological justice literature, Van den Bos and Lind (2002) noted that previous justice models tended to study justice judgments as a component of the social psychology of groups (e.g., Lind & Tyler, 1988; Tyler & Lind, 1992) or were inclined to concentrate on cognitive factors in the justice judgment process (e.g., Folger, 1986; Messick, 1993; Van den Bos, Lind, & Wilke, 2001). As convincingly argued by Sinclair and Mark (1992), there has been remarkably little research on the potential role that affect may have in the process of forming justice judgments (for exceptions, see Sinclair & Mark, 1991, 1992; Tanaka & Takimoto, 1997). An important aim of the present article is to further insights into the role of affect in the psychology of justice judgments.<sup>1</sup> More specifically, I focus here on the question of whether people may use their affective feelings as input (cf. Schwarz & Clore, 1983; see also Forgas, 1995, 2002) in the justice judgment process and under what conditions this is most likely to occur. To the best of my knowledge, there has been no research that has explored these questions. I argue here that it is important to study these issues because this may foster insights into what precisely we are talking about when we talk about social justice.

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<sup>1</sup> In correspondence with earlier work (e.g., Forgas, 1991, 2001), the term *affect* is used here as a general and inclusive label to refer to both mood and emotion.

### What Are We Talking About When We Talk About Social Justice?

In various domains there have been controversies about what exactly scientists mean when they talk (and write) about social justice. In the literature on moral psychology, for example, there has been a debate between rationalist and intuitionist models of moral judgments (Haidt, 2001). Rationalist models state that moral judgments are caused primarily by processes of cognitive reasoning (Kohlberg, 1969; Piaget, 1932/1975; Turiel, 1983). Intuitionist approaches, in contrast, argue that people's intuitive feelings about what is right or wrong cause moral judgments and that moral reasoning is usually a post hoc construction, generated after moral judgments have been reached (Haidt, 2001; Kagan, 1984; Wilson, 1993).

Related to this, in philosophy there have been, on the one hand, ethicists who have conceived of justice as predominantly a principle that can be defined in reference to objective standards of right and wrong (Hare, 1981; Rawls, 1971) and, on the other hand, there have been theorists who have argued that justice judgments are derived from feelings, not from reasoning (Hume, 1739/1951) or that justice is a prime example of an essentially contested concept, a concept about which it is very difficult, if not impossible, to reach agreed meaning (Shotter, 1989).

Compared with the domains of moral psychology or philosophy, social psychological and microsociological articles seem to have paid less attention to the rational–normative or subjective–affective qualities of justice judgments. This suggests that researchers in these latter disciplines have tended to make only implicit assumptions about these qualities. One of the aims of the current contribution is to encourage researchers in these fields to be more explicit about their assumptions. However, there clearly have been some works within these domains that have argued for one of the two perspectives. For example, Jasso (1994, 1999) and Sabbagh, Dar, and Resh (1994) constructed theories in which justice judgments are studied from well-articulated rational–normative ideas of justice evaluations and justice functions, whereas Mikula and Wenzel (2000) stressed that justice is in the eye of the beholder (see also Adams, 1965; Lind, Kanfer, & Earley, 1990; Tyler, Boeckmann, Smith, & Huo, 1997; Van den Bos & Lind, 2002).

Thus, in various scientific domains there exists ambiguity as to what social justice is. Broadly speaking, two lines of thought can be distinguished: One states that justice judgments should be conceived of as judgments that are the result of moral reasoning, a rational–cognitive process; the other argues for the role of subjective–affective elements in the process of forming justice judgments. Furthermore, it can be noted that hard data that can be used to resolve this controversy between rational and subjective perspectives are scarce. As a result, Haidt (2001), for example, could only present his social intuitionist model as a plausible alternative to the rationalist models of morality, not as an established fact (see, e.g., Haidt, 2001, p. 815).

In the current article, I study what we are talking about when we talk about social justice by revealing that under some conditions, the affective state that people are in prior to the justice event can strongly influence their justice judgments. Showing that people who before and unrelated to the justice event are in a positive affective state indeed may report more positive justice judgments

than those who are in a negative affective state would reveal that justice judgments can be very subjective and hence would highlight the subjective quality of justice judgments. I identify the conditions under which affect is likely to influence perceived justice by relying on the literature on affect and cognition (e.g., Forgas, 1991, 1995, 2001, 2002; Martin & Clore, 2001; Schwarz & Clore, 1983; Sedikides, 1995) and by extending a recently developed theory in the psychological justice literature, the uncertainty management model (Van den Bos, 2001c; Van den Bos & Lind, 2002).

### Uncertainty Management

The uncertainty management model is based on earlier psychological accounts of justice (e.g., Lind & Tyler, 1988; Tyler & Lind, 1992; Van den Bos et al., 2001) and tries to explain why people care about justice and how justice judgments are formed (Van den Bos, 2001c; Van den Bos & Lind, 2002). Most relevant for the current purposes is the model's approach to the justice judgment process. This approach is driven by the literature on human judgment under uncertainty (e.g., Kahneman, Slovic, & Tversky, 1982) and by the functional approach to the cognitive dynamics of justice that characterizes earlier work on fairness heuristic theory (e.g., Van den Bos, 2001a; Van den Bos et al., 2001).

Following this approach, the uncertainty management model argues that in the process of forming justice judgments, people tend to look first for justice information that is most relevant in the particular situation in which they find themselves. The model further proposes that it is not uncommon that people lack information about the most relevant justice issues (Van den Bos & Lind, 2002). The uncertainty management model predicts that in these information-uncertain situations people start using other information—as heuristic substitutes—to assess what is just. Thus, the uncertainty management model states that a crucial moderator of the psychology of justice judgments is whether justice judgments are formed under conditions of information certainty or uncertainty. What I suggest here is to use this moderator idea in the investigation of the role of affect as information in the psychology of justice judgments. I therefore argue here that it may be wise to study affective antecedents of justice judgments by taking into account the fundamentally different conditions under which people may form justice judgments, and I propose that information certainty may be a crucial moderator for the study of affect and social justice.

Previous uncertainty management studies suggested that in information-uncertain situations people may start using other justice information (see, e.g., Van den Bos, 1999; Van den Bos, Lind, Vermunt, & Wilke, 1997). For example, Van den Bos et al. (1997) argued that when people are trying to assess whether the outcome that they have received is just or unjust, they prefer to rely on solid outcome information (such as social comparison-based equity information; see Van den Bos et al., 1997) that gives them a clear answer to this question. As a result, their judgments of outcome justice are primarily influenced by this firm outcome information. When such solid outcome information is absent, however, people start using other justice information. For instance, they may start using the justice of the way in which they have been treated, and as a consequence, their judgments of outcome justice may be

influenced by information about procedural justice (see Van den Bos et al., 1997).

Thus, under conditions of information uncertainty, people may substitute one type of justice information for another to avoid uncertainty about whether the event that they experienced was just. This has been labeled the *justice substitutability process*. What I propose in the current article is that affect may also be an important substitute that people may use in the justice judgment process. That is, extending on the uncertainty management model (Van den Bos, 2001c; Van den Bos & Lind, 2002) and the literature on social cognition and affect (e.g., Forgas, 1991, 1995, 2001, 2002; Martin & Clore, 2001; Schwarz & Clore, 1983; Sedikides, 1995), I propose here that especially under conditions of information uncertainty, temporary affect may serve as information used by people as a judgment-simplifying heuristic device (cf. Schwarz & Clore, 1983; see also Forgas, 1995, 2002), and hence, particularly under these conditions, people may consult their existing affective state to infer their justice evaluations and make a judgment accordingly. I therefore studied whether in information-uncertain conditions, people in a positive affective state indeed may show more positive justice judgments than those in a negative affective state.

Revealing that affective states that have no logical, direct relationship with the justice event may serve as input in the justice judgment process would be important because this may highlight the subjective quality of justice judgments. Furthermore, studying the role of affect-as-information substitutes is important, because the concept of information uncertainty led Van den Bos and Lind (2002) to study the psychology of justice judgments by focusing on cognitive antecedents. In this way, in the uncertainty management model, the cognitive dynamics of justice judgments are the main causes of these judgments. Although Van den Bos and Lind argued that their model was intended to encompass not only cognitive aspects of the psychology of justice judgments but affect aspects as well, the empirical research that they reviewed and that was conducted following the uncertainty management model never paid attention to the possibility of affective antecedents of justice judgments. In three experiments, I tried to fill this void.

### Experiment 1

In Experiment 1, I focused on the issue of how people form judgments of outcome justice and under what conditions affect as information may serve a valuable role in judging outcomes. Probably the most well-known and widely accepted answer to the question of how people decide whether their outcome is just or unjust has been provided by equity theory (e.g., Adams, 1965). In essence, equity theory proposes that people judge an outcome as just when their own outcome-to-input ratio equals some comparative or referent outcome-to-input ratio. This process is often driven by social comparison with other people's outcomes and inputs such that people judge their outcome as just when the ratio of their own inputs and outcomes equals the ratio of inputs and outcomes of comparison others (Messick & Sentis, 1983). Equity theory has received wide support in social and organizational studies (e.g., Berkowitz & Walster, 1976).

Thus, equity theory has been very influential, and one of the theory's basic propositions is that in order to judge whether an outcome is just, people have to know what outcomes comparison

others have received. However, do people always know the outcomes of others, as most theorizing on equity theory assumes they do (for overviews, see Adams, 1965; Messick & Sentis, 1983)? Van den Bos et al. (1997) argued that they frequently do not. For instance, in everyday life people often do not know the salaries of the people with whom they work, and even if they do, may not have a good idea of their contributions. If social comparison information about outcomes frequently is not available, then in everyday life the issue of how people form judgments of outcome justice is more complicated than equity theory suggests.

Using this reasoning, one can predict substitutability effects in the process of forming judgments of outcome justice. That is, when people are certain about the outcome of a comparable other person, they will use this social comparison information as a basis for forming outcome justice judgments and will not need other information in the justice judgment process. However, and more important for the current purposes, when people are uncertain about the outcomes that comparable others have received, they will start using other information that is available. I therefore propose here that when people receive an outcome and do not know the outcomes of comparison others, they will refer to the affective state they were in prior to receiving their outcome. Thus, I predict that when others' outcomes are unknown, people will judge their outcome to be more just when prior to receiving their outcome they were in a positive as opposed to a negative affective state.

Because it is known that affect manipulations can be difficult to induce (C. Sedikides, personal communication, October 2, 2001), and because multiple-induction manipulations are more likely to be successful than single induction tasks (e.g., Mayer, Allen, & Beauregard, 1995; Green & Sedikides, 1999; Sedikides, 1992, 1995), three steps were used to induce the affect manipulation of Experiment 1. Participants in the positive affect condition were first asked to imagine (cf. Schwarz & Clore, 1983, Experiment 1; Sedikides, 1992, 1995) for 1 min how they would feel if they were very happy. Second, these participants were asked two open-ended questions that solicited their feelings when they were very happy (cf. Van den Bos, 2001c; Van den Bos & Miedema, 2000; Van Prooijen, Van den Bos, & Wilke, 2002). Third, these participants were asked to rate on the items of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) how they would feel if they were very happy.

Participants in the negative affect condition completed the same three steps as participants in the positive affect condition, but in the negative affect condition they were asked to think of negative affect. More specifically, because pilot testing revealed that people in a sad mood (Van den Bos & Dechesne, 2003) or persons who are very fearful (cf. Forgas, 1995; Green & Sedikides, 1999; Martin & Clore, 2001; Sedikides, 1995; Tiedens & Linton, 2001) are more likely to start thinking about death, and because mortality thoughts would yield an alternative explanation of the effects of affective state (see Van den Bos & Miedema, 2000; cf. Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989), participants were asked to think about an affective feeling that did not remind them about death: Participants in the negative affect condition were asked to think of their being very angry.

Participants in Experiment 1 completed the experiment with a comparable other person. The outcome that participants themselves received was held constant across conditions. It was manipulated that the outcome that participants themselves received

was equal to the outcome of the other participant, was better than the outcome of the other participant, was worse than the outcome of the other participant, or participants did not know the outcome of the other participant. Main dependent variables were participants' judgments of outcome justice.

### Method

**Participants and design.** One hundred sixty students (48 men and 112 women)<sup>2</sup> at Utrecht University participated in the experiment and were paid for their participation. Participants were randomly assigned to one of the conditions of the 2 (affective state: positive vs. negative)  $\times$  4 (outcome of other participant: unknown vs. equal vs. worse vs. better) factorial design. The design was balanced, with an equal number of participants taking part in each of the eight conditions.

**Experimental procedure.** Students at Utrecht University were invited to the laboratory to participate in a study on human judgment. On arrival at the laboratory, participants were led to separate cubicles, each of which contained a computer with a monitor and a keyboard. Next to the monitor, participants found pieces of paper and a pencil. 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 measure the dependent variables and the manipulation checks. Participants completed the experiment before participating in other, unrelated studies. The studies lasted a total of 75 min, and participants were paid 15 Dutch guilders for their participation (1 Dutch guilder equaled approximately \$0.40 U.S. at the time the studies in this article were conducted).

The experimental paradigm used here closely resembled previous justice experiments (e.g., Van den Bos, 1999, 2001b, 2001c; Van den Bos et al., 1997; Van den Bos & Miedema, 2000). In the first part of the instructions, participants were informed that they were participating in the study with another person, referred to as Other. The experimental procedure was then 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. 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 experimenter would divide some lottery tickets between them and Other. 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 tasks were 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—in order to ensure that participants compared themselves to Other—it was communicated to the participant that Other had completed an equivalent number of tasks. To assess whether participants thought of Other as a person who was comparable in the

amounts of inputs he or she provided (cf. Van den Bos, 1999, 2001b, 2001c; Van den Bos et al., 1997; Van den Bos & Miedema, 2000), they were asked to rate on scales from 1 (*much worse*) to 4 (*equally*) to 7 (*much better*) (a) to what extent Other had performed well in the work round relative to the performance of the participant self, (b) to what extent Other did his or her best in the work round relative to the participant self, and (c) to what extent Other was good in performing the tasks in the work round relative to the participant self.

After this, participants were asked to think for 1 min about the percentage of lottery tickets that they should receive relative to Other. Following earlier research (e.g., Van den Bos, 2001b, 2001c; Van den Bos & Miedema, 2000; Van Prooijen et al., 2002), participants were then told that before the experimenter would divide the lottery tickets between them and Other, they would be asked to complete a number of questions that were unrelated to this study<sup>3</sup> and that after they had completed these questions, the study would continue, and they would receive their lottery tickets.

Affect was then manipulated. Participants were put into a positive affective state by first imagining (cf. Sedikides, 1992, 1995; Schwarz & Clore, 1983, Experiment 1) for 1 min how they would feel if they were very happy. Next, extending on Van den Bos (2001c), Van den Bos and Miedema, (2000), and Van Prooijen et al. (2002), these participants were asked to write down on a piece of paper next to the computer their answers to two open-ended questions: (a) "Please briefly describe the emotions that the thought of your being very happy arouses in you" and (b) "Please write down, as specifically as you can, what you think physically will happen to you as you feel very happy." After this, these participants were asked to rate on the 20 items of the PANAS (Watson et al., 1988) how they would feel if they were very happy on a scale from 1 (*not at all*) to 5 (*extremely*). Participants in the negative affect condition completed the same three steps, but in this condition they were asked to imagine being very angry.

The PANAS was included here as part of the affect manipulation and to determine if the affect manipulation led participants to think of either positive or negative affect. The PANAS consists of two subsets of items (Watson et al., 1988), one measuring positive affect and one measuring negative affect, and both subsets were averaged to form reliable scales ( $\alpha$ s = .73 and .88, respectively).

After they had answered the PANAS, all participants were told that by pushing the return button on the keyboard, the study in which they would receive lottery tickets would now continue. It was then communicated to the participants that they had received three lottery tickets (cf. Van den Bos et al., 1997). This was followed by the manipulation of the outcome of Other: Following Van den Bos et al. (1997), participants in the Other–equal condition were informed that Other had received three lottery tickets. In the Other–worse condition, participants were told that Other had received one lottery ticket. In the Other–better condition, participants were informed that Other had received five tickets. In the Other–unknown condition, participants were not told anything about the number of tickets Other had received.

This was followed by the assessment of the dependent variables and the manipulation checks. All ratings were made on 7-point scales. Main

<sup>2</sup> In all experiments presented here, gender was proportionally distributed among conditions. Gender had no main or interaction effects on the dependent variables of all experiments reported here and hence was dropped from the analyses that are presented in this article.

<sup>3</sup> Please remember that participants had been informed that they would participate in a series of studies and hence were expecting to complete different sets of stimulus materials and questions. It therefore came as no surprise to the participants that they were asked to complete questions that were unrelated to this particular study. Furthermore, to enhance the impression that the affect manipulation was unrelated to this study, differently formatted text was used (different font and smaller sized characters) during this manipulation than in the other parts of the experiment.

dependent variables in Experiment 1 were participants' judgments of outcome justice: Following Van den Bos, Maas, Waldring, and Semin (in press), participants were asked how just (1 = *very unjust*, 7 = *very just*), fair (1 = *very unfair*, 7 = *very fair*), appropriate (1 = *very inappropriate*, 7 = *very appropriate*), and justified (1 = *very unjustified*, 7 = *very justified*) they considered their three lottery tickets. Because participants' answers to these four items were highly correlated ( $r_s > .83$ ,  $p_s < .001$ ), their answers were averaged to form a reliable scale of outcome justice judgments ( $\alpha = .97$ ).

To check for the manipulation of the outcome of the other participant, participants were asked to rate on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*) to what extent they agreed with the statements that they (a) received an equal number of tickets as Other, (b) received more lottery tickets than Other, (c) received fewer lottery tickets than Other, and (d) only knew how many tickets they themselves received and did not know how many tickets Other received.

To assess whether the affect manipulation influenced participants' affective feelings, they were asked to respond to 16 items that were specifically constructed by Van den Bos et al. (in press) to measure affective reactions in justice experiments and that have been successfully used in recent justice studies (e.g., Van den Bos, 2001b, 2001c; Van den Bos & Lind, 2002; Van den Bos & Miedema, 2000; Van den Bos & Van Prooijen, 2001): Participants were asked to indicate that when they were thinking of themselves being very happy or angry, 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 from 1 (*very weak*) to 7 (*very strong*). The positive items were averaged to form a reliable scale of positive affective feelings ( $\alpha = .95$ ), and the negative items were averaged to form a reliable index of negative affective feelings ( $\alpha = .96$ ).

As explained above, if the affect manipulation influenced participants' death thoughts, mortality salience would imply an alternative explanation of the findings (Van den Bos & Miedema, 2000). Participants were therefore asked whether they were reminded about death when they were imagining being very happy or angry, rated on a scale from 1 (*not at all*) to 7 (*a lot*).

After this, and after they had completed the other experiments in which they participated, participants were paid for their participation and were thoroughly debriefed. A funneled debriefing procedure was used, modeled after the procedure recommended by Bargh and Chartrand (2000), in which participants were asked what they thought the purpose of the experiment was, what they thought the experiment was trying to study, whether their being asked to report their feelings of happiness or anger was related to their receiving three lottery tickets, whether their being asked to report their happiness or anger feelings before they received their lottery tickets influenced how they reacted to these lottery tickets, whether they felt any strong demands during the experiment to behave in a particular way, and whether they felt strong demands to rate the fairness and justice of their lottery tickets in a particular way. After this, participants were informed about the purposes of the experiment, that all stimulus information was preprogrammed, and that after all participants had completed the experiment, 100 Dutch guilders would be randomly given to 1 participant, and they were asked whether they objected to this experimental procedure. Participants indicated that they did not experience a direct relationship between the affect manipulation and their reactions to the lottery tickets nor strong demand characteristics to behave or react in a particular way during the experiment, and none of the participants objected to the experimental procedure used in this study. This indicates that there were no ethical or demand characteristic problems with this study.

## Results

**Manipulation checks of outcome.** A two-way multivariate analysis of variance on the manipulation checks of outcome yielded only a main effect of outcome at both the multivariate level

and the univariate levels: multivariate,  $F(12, 453) = 111.17$ ,  $p < .001$ ; for the Other–equal check,  $F(3, 152) = 73.76$ ,  $p < .001$ ; for the Other–worse check,  $F(3, 152) = 139.42$ ,  $p < .001$ ; for the Other–better check,  $F(3, 152) = 74.51$ ,  $p < .001$ ; for the Other–unknown check,  $F(3, 152) = 164.22$ ,  $p < .001$ . To interpret these effects, I performed on each manipulation check a least significant difference test for multiple comparisons between means ( $p < .05$ ; Kirk, 1982), with the four conditions of the outcome manipulation serving as the independent variable. This showed that participants in the Other–equal condition agreed more with the statement that their number of lottery tickets equaled the number of Other's tickets ( $M = 6.2$ ,  $SD = 1.7$ ) than participants in the other three outcome conditions ( $M = 1.8$ ,  $SD = 1.6$ ). Similarly, participants in the Other–worse condition agreed more with the statement that they received an outcome that was better than the other participant's outcome ( $M = 6.4$ ,  $SD = 1.5$ ) than participants in the other outcome conditions ( $M = 1.5$ ,  $SD = 1.2$ ), and participants in the Other–better condition agreed more with the statement that they received an outcome that was worse than the other participant's outcome ( $M = 6.0$ ,  $SD = 2.0$ ) than participants in the other outcome conditions ( $M = 1.6$ ,  $SD = 1.4$ ). Finally, participants in the Other–unknown condition agreed more with the statement that they only knew how many tickets they themselves received and did not know how many tickets Other received ( $M = 6.1$ ,  $SD = 1.7$ ) than participants in the other outcome conditions ( $M = 1.3$ ,  $SD = 0.9$ ). These results indicate that the outcome manipulation was perceived as intended.

**Manipulation checks of affect.** To assess whether the affect manipulation influenced participants' affective feelings, participants were asked—after both independent variables had been induced—to indicate that when they were thinking of their being very happy or angry, to what extent they felt themselves to be in positive or negative affective states.<sup>4</sup> As expected, the positive and negative subsets of participants' affective feelings revealed only a main effect of affect at both the multivariate level and the univariate levels: multivariate,  $F(2, 151) = 142.15$ ,  $p < .001$ ; for the positive subset,  $F(1, 152) = 228.87$ ,  $p < .001$ ; for the negative subset,  $F(1, 152) = 137.84$ ,  $p < .001$ . Participants in the positive affect condition showed higher levels of positive affect ( $M = 4.9$ ,  $SD = 0.9$ ) and lower levels of negative affect ( $M = 1.5$ ,  $SD = 0.8$ ) than those in the negative affect condition ( $M_s = 2.4$  and  $3.6$ ;  $SD_s = 1.2$  and  $1.4$ ). This suggests that the affect manipulation was

<sup>4</sup> A careful reader will have noted that *happy* and *angry* were included in these items. Principal-components analyses (PCA) with varimax rotation clearly showed two-factor solutions of the answers of participants in Experiments 1–3 (eigenvalues in Experiment 1: 9.68 and 2.47; in Experiment 2: 10.27 and 2.04; in Experiment 3: 7.86 and 3.62), one factor referring to positive affect and one to negative affect. PCA also yielded two-factor solutions of participants' answers to the PANAS items. The “happy” and “angry” items did not stand out in the positive and negative factors (factor loadings for “happy” and all positive affect items in Experiment 1: .79 and .83, respectively; in Experiment 2: .88 and .86; in Experiment 3: .91 and .87; factor loadings for “angry” and all negative affect items in Experiment 1: .81 and .79, respectively; in Experiment 2: .82 and .78; in Experiment 3: .81 and .80). This showed that, as intended, the affect manipulation was successful in influencing participants' general feelings of positive and negative affect (rather than just happiness and anger).

successful in influencing the relative strength of participants' affective feelings in ways that were intended with this manipulation.

**PANAS ratings.** As part of the affect manipulation, participants completed the PANAS while thinking of their being very happy or angry. As expected, the positive and negative subsets of the PANAS yielded only a main effect of affect at both the multivariate level and the univariate levels: multivariate,  $F(2, 151) = 196.64, p < .001$ ; for the positive subset,  $F(1, 152) = 118.80, p < .001$ ; for the negative subset,  $F(1, 152) = 299.21, p < .001$ . Participants in the positive affect condition showed higher levels of positive affect ( $M = 4.0, SD = 0.4$ ) and lower levels of negative affect ( $M = 1.3, SD = 0.4$ ) than those in the negative affect condition ( $M_s = 3.1$  and  $2.7, SD_s = 0.6$  and  $0.6$ ). This suggests that when participants were completing the PANAS they were, as intended, thinking of positive or negative affective states and provides corroborative evidence that the manipulation of affect was induced as intended.

**Death thoughts.** Participants' death thoughts did not yield any significant effects of the independent variables. Inspection of the means showed that, as intended, participants were not thinking about death during the affect manipulation ( $M = 1.4, SD = 1.2$ ).

**Affect responses.** Two judges coded whether the responses that participants wrote down during the induction of the affect manipulation showed that they had been thinking about positive or negative affective feelings. As expected, the two judges independently of each other indicated (with 100% agreement between the judges) that what participants wrote down showed that participants in the positive affect condition had been thinking of positive affective feelings whereas those in the negative affect condition had been thinking of negative affective feelings. This indicates that the affect manipulation was successfully operationalized.

Furthermore, the two judges coded whether the answers that participants wrote down in both affect conditions had anything to do with justice-related or death-related issues. Independent of each other, the judges indicated (100% agreement) that participants' responses were not related to social justice. This suggests that, as expected, the affect manipulation did not increase the salience of justice-related or death-related issues.

**Comparability measures.** The answers that participants gave on the questions that assessed whether they thought of the other participant as a comparable person did not show any significant results at either the multivariate level or the univariate levels. The

means indicate that participants thought that the other participant had performed equally well in the work round ( $M = 4.0, SD = 0.5$ ), had done equally his or her best in the work round ( $M = 4.0, SD = 0.4$ ), and was equally good in performing the tasks ( $M = 3.9, SD = 0.5$ ). Thus, participants thought of the other person as a comparable person with respect to the tasks that were completed in the experiment.

**Outcome justice judgments.** Means and standard deviations of the outcome justice scale are shown in Table 1. Participants' justice judgments yielded a main effect of outcome,  $F(3, 152) = 46.07, p < .001$ , and a marginally significant main effect of affect,  $F(1, 152) = 3.59, p = .06$ , effects that were qualified by the predicted interaction effect,  $F(3, 152) = 2.69, p < .05$ . To interpret these effects, I conducted on the outcome justice judgments scale a least significant difference test for multiple comparisons between means ( $p < .05$ ), with the eight cells of the design of Experiment 1 serving as the independent variable. Table 1 shows the results of this test. As hypothesized, results showed that within the condition in which Other's outcome was unknown, participants in the positive affect condition judged their outcome to be more just than participants in the negative affect condition. The affect manipulation did not significantly influence justice judgments in the Other=equal, Other=worse, and Other=better conditions.

Another way to describe the hypothesis of Experiment 1 is to say that in the condition in which the other participant's outcome was unknown, participants' outcome justice judgments would be affected more strongly by the affective feelings they had been experiencing prior to receiving their outcome than in the other three outcome conditions. Regressing participants' outcome judgments on the positive and negative subsets of the affective items and the PANAS indeed showed significant results in the Other=unknown condition ( $R^2 = .25, F(4, 35) = 2.90, p < .04$ ; and nonsignificant effects in the conditions Other=equal ( $R^2 = .10, F(4, 35) = 0.96, ns$ ; Other=worse ( $R^2 = .10, F(4, 35) = 0.88, ns$ ; and Other=better ( $R^2 = .11, F(4, 35) = 1.07, ns$ ). These findings provide supportive evidence for the hypothesis investigated in Experiment 1.

## Discussion

As predicted, the findings of Experiment 1 reveal that when people do not know what outcome a comparable other person has

Table 1  
Means and Standard Deviations of Outcome Justice Judgments as a Function of Affective State and Outcome of Other Participant (Experiment 1)

Affective state	Outcome of other participant							
	Unknown		Equal		Worse		Better	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Positive	4.3 <sub>b</sub>	1.3	6.1 <sub>a</sub>	1.0	2.8 <sub>c</sub>	1.5	3.2 <sub>c</sub>	1.5
Negative	3.1 <sub>c</sub>	1.6	5.9 <sub>a</sub>	1.4	3.2 <sub>c</sub>	1.3	2.5 <sub>c</sub>	1.1

*Note.* Means are on 7-point scales, with higher values indicating higher levels of judgments of outcome justice. Means with no subscripts in common differ significantly ( $p < .05$ ), as indicated by a least significant difference test for multiple comparisons between means (Kirk, 1982).

received, they will judge their outcome to be more just when prior to receiving their outcome they were in a positive as opposed to a negative affective state. Furthermore, when people know that the outcome of the other person is either better than their own outcome, worse than their own outcome, or equal to their own outcome, their justice judgments primarily are influenced by this social comparison information and are not significantly influenced by the affective state they were in. Thus, as hypothesized, the findings of Experiment 1 suggest that especially under conditions of information uncertainty (e.g., when outcomes of comparable others are unknown), people may consult the affective state they were in to infer their justice evaluations of the outcome they have received. Before strong conclusions are drawn on the basis of these findings, however, it is important to present the findings of a second experiment in which I tried to collect additional evidence for the line of reasoning presented in this article.

### Experiment 2

Equity theory is a theory of distributive justice, because it focuses on the justice of outcomes that people receive. Although issues of distributive justice are critical in social behavior and were the first to capture the attention of social psychologists, they are only part of the story: Social justice concerns include questions about the justice of processes and procedures as well as questions about the justice of outcomes (Brockner & Wiesenfeld, 1996; Folger, 1977; Greenberg, 1990; Lind & Tyler, 1988; Tyler & Lind, 1992). Therefore, whereas Experiment 1 focused on judgments of outcome justice, Experiment 2 explored the possible role of affect as information in the process of forming judgments of procedural justice.

One of the key determinants that lead people to judge a particular procedure as just or unjust is the concept of *voice*. That is, when people receive an opportunity to voice their opinion in a decision-making process, they generally judge the way in which they have been treated to be more just than when they do not receive such an opportunity. In fact, several authors have noted that these voice effects are among the most important and robust findings in the domain of procedural justice and in the field of social psychology (Lind & Tyler, 1988; Tyler, 1987; Tyler & Lind, 1992; Van den Bos et al., 1997) and that varying participants' voice opportunities is the most generally accepted manipulation of procedural justice (see, e.g., Folger, 1977; Lind et al., 1990; Van den Bos et al., 1997).

However, it can be argued that the psychology of voice and no-voice procedures is more complicated than what was previously thought. That is, in earlier procedural justice studies, two different types of no-voice procedures have been treated as if they were one and the same thing, whereas they are different in everyday life and may prompt different justice judgment processes. One type of no-voice procedure has been used in studies by Folger (1977) and Lind et al. (1990). In both these experiments, only participants who received voice were informed about a possibility that participants could have an opportunity to voice their opinion about an important decision the experimenter was going to make, and after this they were informed that they had received such an opportunity. Participants in the no-voice condition were not informed about the possible voice opportunities and hence received no voice information. I label this here as a *no-voice-information*

procedure (see also Van den Bos, 1999). In my own research, I have used predominantly a different type of no-voice procedure (e.g., Van den Bos et al., 1997; see also Brockner et al., 1998, Study 5; Hunton, Hall, & Price, 1998): In both the voice and the no-voice conditions, participants were informed that there was a possibility that participants could have an opportunity to voice their opinion about a decision the experimenter was going to make. Participants in the voice conditions were told that they received voice whereas participants in the no-voice conditions were informed that they did not have an opportunity to voice their opinion. I call this latter procedure an *explicit-no-voice* procedure (Van den Bos, 1999).

Making a distinction between no-voice information and explicit no voice is not only methodologically important but may also help to further insights in the psychology of procedural justice judgments. That is, in the case of procedures that communicate no voice information, people have, in effect, no direct, explicit information about procedure to rely on, whereas in the case of voice and explicit no-voice procedures, people do have such direct, explicit procedure information. Using this reasoning, we can predict substitutability effects in the process of forming judgments of procedural justice. That is, when people are certain about the procedure they have experienced (as in the case of explicit voice or no-voice procedures), they will use this explicit procedure information as a basis for forming procedural justice judgments and will not need other information in the justice judgment process. However, and more interestingly for the current purposes, when people are uncertain about the way they have been treated (as in the case of procedures that communicate no voice information) they will start using other information that is available. Thus, I propose here that when people are forming procedural justice judgments and have received no voice information, they will refer to the affective state they were in. I therefore predict that in the case of no-voice-information procedures, people will judge their procedure to be more just when they have been brought into a positive as opposed to a negative affective state.

After the affect manipulation, which was the same as in Experiment 1, participants in Experiment 2 experienced either a procedure that communicated no-voice information, an explicit no-voice procedure, or a voice procedure. Main dependent variables were participants' judgments of procedural justice.

### Method

*Participants and design.* One hundred twenty students (31 men and 89 women) at Utrecht University participated in the experiment and were paid for their participation. Participants were randomly assigned to one of the conditions of the 2 (affective state: positive vs. negative)  $\times$  3 (procedure: no-voice information vs. explicit no voice vs. voice) factorial design. The design was balanced, with an equal number of participants taking part in each of the six conditions.

*Experimental procedure.* The experimental procedure was the same as in Experiment 1, except for the below-mentioned points. Students at Utrecht University were invited to the laboratory to participate in a study on how people perform tasks and completed the experiment before participating in other, unrelated studies. The studies lasted a total of 90 min, and participants were paid 17.50 Dutch guilders for their participation.

After the lottery and the experimental tasks had been explained and the practice and work rounds had ended, participants were told how many tasks they had completed in the work round and that Other had completed an equivalent number of tasks. After this, participants were asked the same

comparability measures that were solicited in Experiment 1 to assess whether participants thought of Other as a person who was comparable in the amounts of inputs he or she provided. After this, participants were asked to think for 1 min about the percentage of lottery tickets that they should receive relative to Other. This was followed by the affect manipulation, which was induced in the same manner as in Experiment 1. Participants' answers to the PANAS items again yielded reliable scales of the positive and negative subsets ( $\alpha$ s = .74 and .87, respectively).

The procedure that participants received was then manipulated: Following Van den Bos (1999), participants in the voice and explicit-no-voice conditions were informed about an opportunity to voice their opinion: In the voice condition, the experimenter 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 Other. (In reality, however, all stimulus information was preprogrammed.) Participants in the explicit 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 Other. In the no-voice-information condition, participants did not receive this information about voice or no voice.

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 in Experiment 2 were participants' judgments of procedural justice: Participants were asked how just (1 = *very unjust*, 7 = *very just*), fair (1 = *very unfair*, 7 = *very fair*), appropriate (1 = *very inappropriate*, 7 = *very appropriate*), and justified (1 = *very unjustified*, 7 = *very justified*) they considered the way they were treated. Because participants' answers to these four items were highly correlated ( $r$ s > .92,  $p$ s < .001), their answers were averaged to form a reliable scale of procedural justice judgments ( $\alpha$  = .98).

To check for the manipulation of procedure, participants were asked to rate on scales of 1 (*strongly disagree*) to 7 (*strongly agree*) to what extent they agreed with the statement that they (a) had been explicitly informed that they received an opportunity to voice their opinion about the percentage of tickets that they should receive relative to Other, (b) had been explicitly informed that they would not receive an opportunity to voice their opinion about the percentage of tickets that they should receive relative to Other, and (c) had not been explicitly informed whether or not they would receive an opportunity to voice their opinion about the percentage of tickets that they should receive relative to Other. To assess whether the affect manipulation influenced participants' affective feelings, they were asked to respond to the same 16 items that were measured in Experiment 1 to assess participants' affective feelings while they were thinking of being very happy or angry. Participants' answers to these items again yielded reliable scales of the positive and negative subsets ( $\alpha$ s = .96 and .95, respectively). Finally, to assess participants' death thoughts, participants were asked whether they were reminded about death when they were thinking of being very happy or angry (1 = *not at all*, 7 = *a lot*). After this, and after they had completed the other experiments in which they would participate, participants were paid for their participation and completed the same debriefing procedure as in Experiment 1 (revealing, as in Experiment 1, no ethical or demand characteristic problems).

## Results

**Manipulation checks of procedure.** The manipulation checks of procedure yielded only a main effect of procedure at both the multivariate level and the univariate levels: multivariate,  $F(6, 226) = 75.80, p < .001$ ; for the voice check,  $F(2, 114) = 65.14, p < .001$ ; for the explicit no-voice check,  $F(2, 114) = 91.95, p < .001$ ; for the no-voice information check,  $F(2, 114) = 114.06, p < .001$ . To interpret these effects, I performed on each manipulation check a least significant difference test for multiple comparisons between means ( $p < .05$ ), with the three conditions of the procedure manipulation serving as the independent variable. This

showed that participants in the voice condition agreed more with the statement that they had been explicitly informed that they received an opportunity to voice their opinion about the percentage of tickets that they should receive relative to Other ( $M = 5.9, SD = 1.7$ ) than participants in the other two procedure conditions ( $M = 2.1, SD = 1.7$ ). Similarly, participants in the explicit-no-voice condition agreed more with the statement that they had been explicitly informed that they would not receive an opportunity to voice their opinion ( $M = 5.7, SD = 2.0$ ) than participants in the other procedure conditions ( $M = 1.7, SD = 1.3$ ). Finally, participants in the no-voice information condition agreed more with the statement that they had not been explicitly informed whether or not they would receive an opportunity to voice their opinion ( $M = 6.0, SD = 1.4$ ) than participants in the other procedure conditions ( $M = 1.8, SD = 1.4$ ). These results indicate that the procedure manipulation was perceived as intended.

**Manipulation checks of affect.** As expected, the positive and negative subsets of participants' affective feelings that they experienced when thinking of their being very happy or angry revealed only a main effect of affect at both the multivariate level and the univariate levels: multivariate,  $F(2, 151) = 142.15, p < .001$ ; for the positive subset,  $F(1, 152) = 228.87, p < .001$ ; for the negative subset,  $F(1, 152) = 137.84, p < .001$ . Again, participants in the positive affect condition showed higher levels of positive affect ( $M = 4.9, SD = 0.9$ ) and lower levels of negative affect ( $M = 1.5, SD = 0.8$ ) than participants in the negative affect condition ( $M$ s = 2.4 and 3.6,  $SD$ s = 1.2 and 1.4). This suggests that the affect manipulation was successful in influencing the relative strength of participants' affective feelings in ways that were intended with this manipulation.

**PANAS ratings.** As in Experiment 1, the positive and negative subsets of the PANAS yielded only a main effect of affect at both the multivariate level and the univariate levels: multivariate,  $F(2, 113) = 150.01, p < .001$ ; for the positive subset,  $F(1, 114) = 84.03, p < .001$ ; for the negative subset,  $F(1, 114) = 239.48, p < .001$ . Again, participants in the positive affect condition showed higher levels of positive affect ( $M = 4.0, SD = 0.4$ ) and lower levels of negative affect ( $M = 1.4, SD = 0.4$ ) than participants in the negative affect condition ( $M$ s = 3.2 and 2.7,  $SD$ s = 0.6 and 0.6). This indicates that when participants were completing the PANAS they were, as intended, thinking of positive or negative affective states and provides corroborative evidence that the affect manipulation was induced as intended.

**Death thoughts.** Participants' death thoughts did not yield any significant effects of the independent variables. As intended, participants were not thinking about death during the affect manipulation ( $M = 1.2, SD = 0.7$ ).

**Affect responses.** Two judges agreed (with 100% agreement between judges) that what participants wrote down during the induction of the affect manipulation showed that participants in the positive affect condition had been thinking of positive affective feelings, whereas those in the negative affect condition had been thinking of negative affective feelings. The two judges also agreed (100%) that participants' responses were not related to social justice or death. This suggests that the affect manipulation was successfully operationalized and that as intended, the affect manipulation did not increase the salience of justice-related or death-related issues.



*Comparability measures.* The answers that participants gave on the questions that assessed whether they thought of the other participant as a comparable person did not yield any significant results at either the multivariate level or the univariate levels. Participants thought that the other participant had performed equally well in the work round ( $M = 4.0$ ,  $SD = 0.3$ ), had done equally his or her best in the work round ( $M = 4.0$ ,  $SD = 0.1$ ), and was equally good in performing the tasks ( $M = 4.0$ ,  $SD = 0.2$ ). It can be concluded that participants thought of the other person as a comparable person with respect to the tasks that were completed in the experiment.

*Percentage findings.* Participants who were allowed voice ( $n = 40$ ) typed in their opinion about the percentage of tickets that they should receive relative to the other participant. An analysis of variance indicated that independent of the affect manipulation, participants typed in that the lottery tickets should be divided equally between themselves and the other participant; 37 of the participants answered that they should get 50% of the tickets, and the mean percentage was 50.4% ( $SD = 10.8$ ). Thus, 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).

*Procedural justice judgments.* Means and standard deviations of the procedural justice scale are shown in Table 2. Participants' justice judgments yielded main effects of procedure,  $F(2, 114) = 35.28$ ,  $p < .001$ , and affect,  $F(1, 114) = 10.78$ ,  $p < .001$ , effects that were qualified by the predicted interaction effect,  $F(2, 114) = 26.63$ ,  $p < .001$ . To interpret these effects, I conducted on the procedural justice judgments scale a least significant difference test for multiple comparisons between means ( $p < .05$ ), with the six cells of the design of Experiment 2 serving as the independent variable. Table 2 shows the results of this test. As hypothesized, findings revealed that within the condition in which participants received no voice information, participants in the positive affect condition judged the way in which they had been treated to be more just than those in the negative affect condition. The affect manipulation did not influence justice judgments in the voice and explicit-no-voice conditions.

Table 2  
*Means and Standard Deviations of Procedural Justice Judgments as a Function of Affective State and Procedure (Experiment 2)*

Affective state	Procedure					
	No voice information		Explicit no voice		Voice	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Positive	5.5 <sub>a</sub>	0.7	2.8 <sub>b</sub>	1.0	4.8 <sub>a</sub>	1.4
Negative	2.4 <sub>b</sub>	1.4	2.8 <sub>b</sub>	1.6	5.5 <sub>a</sub>	1.2

*Note.* Means are on 7-point scales, with higher values indicating higher levels of judgments of procedural justice. Means with no subscripts in common differ significantly ( $p < .05$ ), as indicated by a least significant difference test for multiple comparisons between means (Kirk, 1982).

Another way to frame the hypothesis of Experiment 2 is to state that in the condition in which participants received no voice information, participants' procedural justice judgments would be affected more strongly by their affective feelings than in the other two procedure conditions. Regressing participants' procedural justice judgments on the positive and negative subsets of the affective items and the PANAS indeed showed significant findings in the no-voice-information condition ( $R^2 = .73$ ),  $F(4, 35) = 23.81$ ,  $p < .001$ , and nonsignificant results in the explicit no-voice ( $R^2 = .06$ ),  $F(4, 35) = 0.54$ , *ns*, and voice ( $R^2 = .21$ ),  $F(4, 35) = 2.39$ , *ns*, conditions. These findings revealed supportive evidence for the hypothesis investigated in Experiment 2.

### Discussion

As hypothesized, the findings of Experiment 2 show that when people receive no voice information they will judge their procedure to be more just when they had been brought into a positive as opposed to a negative affective state. Furthermore, when people receive an opportunity to voice their opinion or are explicitly denied such an opportunity, their justice judgments are mainly shaped by this information about procedure and are not significantly influenced by the affective state they were in. Thus, as predicted, these findings suggest that especially under conditions of information uncertainty (e.g., in the case when procedures do not communicate voice information), people may refer to the affective state they were in to infer their justice evaluations of the way in which they have been treated.

### Experiment 3

In correspondence with predictions, the findings of both Experiments 1 and 2 show that when people are forming justice judgments and do not have the most relevant information for doing so, their judgments can be influenced by the affective state they were in prior to forming the justice judgments: Participants who were in a positive affective state reported more positive justice judgments than those in a negative affective state. Before I drew final conclusions, I conducted a third experiment using the same procedure manipulation as in Experiment 2. However, in Experiment 3 the manipulation of affect included a control condition that did not create substantially either positive or negative affect. This was done because it was important to determine whether, under conditions of information uncertainty, it is primarily positive affect that leads to more positive justice judgments, negative affect that yields more negative judgments, or both positive and negative affective states can influence justice judgments compared with the control condition.

Including these types of control conditions is particularly important in the affect area with so many competing theories that sometimes lead to similar predictions and sometimes lead to different predictions. For example, some studies have shown that affect, whether positive or negative, leads to more heuristic processing compared with low-affect conditions (e.g., Mackie & Worth, 1989). Others have suggested that positive affect may produce more heuristic processing, whereas negative affect leads to more deliberative processing (e.g., Bless, Bohner, Schwarz, & Strack, 1990). Still others hypothesized that positive affect leads to more inclusiveness, optimism, and elaborative processing (e.g.,

Isen, 2002). Some of these perspectives may be addressed by considering the lack of effect of the affect manipulation in the outcome of other known conditions of Experiment 1 and the explicit procedure conditions of Experiment 2, but the effects of the positive and negative affect manipulations still need to be compared with the results of appropriate control conditions.

In two other ways, the stimulus materials of Experiment 3 were improved. In Experiments 1 and 2, three steps were used to induce the affect manipulation. Given that consistent effects of this manipulation were demonstrated, it was now time to show the same effects with a simpler manipulation. Participants in Experiment 3 were therefore only asked to rate on the PANAS how they would feel if they were very happy (positive affect condition), very angry (negative affect condition), or not happy and not angry (control condition). The second way in which materials were improved was by noting that in Experiments 1 and 2, the checks on the manipulation of affect asked participants about the feelings participants encountered while they were thinking of their being very happy or very angry. Because it was important to demonstrate that these affective feelings were still being experienced when participants answered the dependent variables, in Experiment 3 the affect manipulation checks asked for the affect participants experienced throughout the time they completed the dependent variables.<sup>5</sup>

## Method

*Participants and design.* Two hundred forty-three students (73 men and 170 women) at Utrecht University participated in the experiment and were paid for their participation. Participants were randomly assigned to one of the conditions of the 3 (affective state: positive vs. control vs. negative)  $\times$  3 (procedure: no-voice information vs. explicit no voice vs. voice) factorial design. The design was balanced, with an equal number of participants taking part in each of the nine conditions.

*Experimental procedure.* The experimental procedure was the same as in Experiment 2, except for the below-mentioned points. Students at Utrecht University completed the experiment before and after participating in other, unrelated studies. The studies lasted a total of 75 min, and participants were paid 7 Euros for their participation (1 Euro equaled approximately \$1 U.S. at the time the studies in this article were conducted).

After the lottery and the experimental tasks had been explained, the practice and work rounds had ended, and participants had been told how many tasks they had completed in the work round and that Other had completed an equivalent number of tasks, participants were asked the same comparability measures that were solicited in Experiments 1 and 2 to assess whether participants thought of Other as a person who was comparable in the amounts of inputs he or she provided. After this, participants were asked to think for 1 min about the percentage of lottery tickets that they should receive relative to Other. This was followed by the affect manipulation, which in Experiment 3 was induced by asking participants to complete the PANAS while thinking of their being either very happy, very angry, or not happy and not angry. Participants' answers again yielded reliable scales of the positive and negative subsets ( $\alpha$ s = .84 and .91, respectively). This was followed by the manipulation of procedure, which was the same as in Experiment 2, and the assessment of the dependent variables and the manipulation checks. Dependent variables were the same procedural justice judgments as in Experiment 2 ( $r$ s > .90,  $p$ s < .001,  $\alpha$  = .98). Furthermore, the same affective feelings were measured as checks on the manipulation of affect, but this time participants were asked to indicate how they felt while answering the dependent variables ( $\alpha$ s of the positive and negative subsets both = .94). Finally, participants completed the same manipulation checks of procedure as in Experiment 2 as well as the same

death thoughts and the same debriefing procedure as in Experiments 1 and 2 (again yielding no ethical or demand characteristic problems).

## Results

*Manipulation checks of procedure.* The manipulation checks of procedure yielded only a main effect of procedure at both the multivariate level and the univariate levels: multivariate,  $F(6, 464) = 99.52, p < .001$ ; for the voice check,  $F(2, 234) = 61.22, p < .001$ ; for the explicit-no-voice check,  $F(2, 234) = 178.58, p < .001$ ; for the no-voice-information check,  $F(2, 234) = 105.67, p < .001$ . To interpret these effects, I performed on each manipulation check a least significant difference test for multiple comparisons between means ( $p < .05$ ), with the three conditions of the procedure manipulation serving as the independent variable. This showed that participants in the voice condition agreed more with the statement that they had been explicitly informed that they received an opportunity to voice their opinion about the percentage of tickets that they should receive relative to Other ( $M = 5.9, SD = 1.5$ ) than participants in the other two procedure conditions ( $M = 2.9, SD = 2.3$ ). Similarly, participants in the explicit-no-voice condition agreed more with the statement that they had been explicitly informed that they would not receive an opportunity to voice their opinion ( $M = 5.7, SD = 1.8$ ) than participants in the other procedure conditions ( $M = 1.8, SD = 1.4$ ). Finally, participants in the no-voice-information condition agreed more with the statement that they had not been explicitly informed whether or not they would receive an opportunity to voice their opinion ( $M = 5.3, SD = 1.7$ ) than participants in the other procedure conditions ( $M = 1.8, SD = 1.4$ ). These results indicate that the procedure manipulation was perceived as intended.

*Manipulation checks of affect.* The positive and negative subsets of participants' affective feelings that they experienced when they answered the dependent variables revealed the expected main effect of affect at both the multivariate level and the univariate levels: multivariate,  $F(6, 464) = 13.39, p < .001$ ; for the positive subset,  $F(2, 234) = 20.89, p < .001$ ; for the negative subset,  $F(2, 234) = 13.12, p < .001$ . To interpret these effects, a least significant difference test for multiple comparisons between means was conducted ( $p < .05$ ), with the three conditions of the affect manipulation serving as the independent variable. As expected, participants in the positive affect condition showed higher levels of positive affect ( $M = 4.5, SD = 1.1$ ) than participants in both the control ( $M = 3.9, SD = 1.4$ ) and negative affect ( $M = 3.2, SD = 1.2$ ) conditions. Participants in the negative affect condition showed higher mean ratings of negative affect ( $M = 2.5, SD = 1.2$ ) than participants in both the control ( $M = 1.8, SD = 0.9$ ) and positive affect ( $M = 1.7, SD = 1.0$ ) conditions. This reveals that in correspondence with Experiments 1 and 2, participants in the positive affect condition showed higher levels of positive affect and lower levels of negative affect than those in the negative affect condition and that as intended, the control condition did not create substantially positive or negative affect. This suggests that the affect manipulation was successful in influencing

<sup>5</sup> The items used in Experiments 1 and 2 to check for the affect manipulation were also measured in Experiment 3 and yielded the same results as the new items. To be as parsimonious as possible, only the new items are discussed here.

the relative strength of participants' affective feelings in ways that were intended with this manipulation.

**PANAS ratings.** As in Experiments 1 and 2, the positive and negative subsets of the PANAS yielded only a main effect of affect at both the multivariate level and the univariate levels: multivariate,  $F(4, 466) = 143.89, p < .001$ ; for the positive subset,  $F(2, 234) = 154.65, p < .001$ ; for the negative subset,  $F(2, 234) = 169.98, p < .001$ . As expected, a least significant difference test for multiple comparisons between means ( $p < .05$ ), with the affect manipulation as the independent variable, revealed that participants in the positive affect condition showed higher levels of positive affect ( $M = 4.0, SD = 0.4$ ) than participants in both the control ( $M = 2.6, SD = 0.7$ ) and negative affect ( $M = 2.9, SD = 0.5$ ) conditions. Participants in the negative affect condition showed higher mean ratings of negative affect ( $M = 2.9, SD = 0.6$ ) than participants in both the control ( $M = 1.7, SD = 0.7$ ) and positive affect ( $M = 1.3, SD = 0.3$ ) conditions. Thus, in correspondence with the affect manipulation check results, the PANAS findings indicate that participants in the positive affect condition showed higher levels of positive affect and lower levels of negative affect than those in the negative affect condition and that the control condition did not create substantially positive or negative affect. This provides corroborative evidence that the affect manipulation was induced as intended.

**Death thoughts.** Participants' death thoughts did not yield any significant effects of the independent variables. As intended, participants were not thinking about death during the affect manipulation ( $M = 1.4, SD = 0.9$ ).

**Comparability measures.** The answers that participants gave on the questions that assessed whether they thought of the other participant as a comparable person did not yield any significant results at either the multivariate level or the univariate levels. Participants thought that the other participant had performed equally well in the work round ( $M = 4.0, SD = 0.3$ ), had done equally his or her best in the work round ( $M = 4.0, SD = 0.3$ ), and was equally good in performing the tasks ( $M = 4.0, SD = 0.2$ ).

**Percentage findings.** Participants who were allowed voice ( $n = 81$ ) typed in their opinion about the percentage of tickets that they should receive relative to the other participant. In correspondence with Experiment 2, an analysis of variance indicated that independent of the affect manipulation, participants typed in that the lottery tickets should be divided equally between themselves and the other participant. Seventy-seven of the participants answered that they should get 50% of the tickets, and the mean percentage was 51.2% ( $SD = 8.0$ ).

**Procedural justice judgments.** Means and standard deviations of the procedural justice scale are shown in Table 3. Participants' justice judgments yielded main effects of procedure,  $F(2, 234) = 66.20, p < .001$ , and affect,  $F(2, 234) = 13.03, p < .001$ ; effects that were qualified by the predicted interaction effect,  $F(4, 234) = 10.31, p < .001$ . To interpret these effects, a least significant difference test for multiple comparisons between means was conducted ( $p < .05$ ), with the nine cells of the design of Experiment 3 serving as the independent variable. Table 3 shows the results of this test. As hypothesized, findings revealed that when participants received no voice information, participants in the positive affect condition judged the way in which they had been treated to be more just than those in the control condition, and participants in the negative affect condition judged the way in

Table 3  
*Means and Standard Deviations of Procedural Justice Judgments as a Function of Affective State and Procedure (Experiment 3)*

Affective state	Procedure					
	No voice information		Explicit no voice		Voice	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Positive	5.5 <sub>a</sub>	1.0	2.5 <sub>c</sub>	1.3	5.1 <sub>a,b</sub>	1.4
Control	4.7 <sub>b</sub>	1.1	3.0 <sub>c</sub>	1.5	5.2 <sub>a,b</sub>	1.6
Negative	2.8 <sub>c</sub>	1.5	2.7 <sub>c</sub>	1.3	4.9 <sub>a,b</sub>	1.1

*Note.* Means are on 7-point scales, with higher values indicating higher levels of judgments of procedural justice. Means with no subscripts in common differ significantly ( $p < .05$ ), as indicated by a least significant difference test for multiple comparisons between means (Kirk, 1982).

which they had been treated to be more unjust than those in the control condition. The affect manipulation did not influence justice judgments in the voice and explicit-no-voice conditions.

Another way to frame the hypothesis of Experiment 3 is to state that in the condition in which participants received no voice information, participants' procedural justice judgments would be affected more strongly by their affective feelings than in the other two procedure conditions. Regressing participants' procedural justice judgments on the positive and negative subsets of the affective items and the PANAS indeed showed significant findings in the no-voice-information condition ( $R^2 = .50$ ),  $F(4, 76) = 19.23, p < .001$ , and nonsignificant results in the explicit no-voice ( $R^2 = .03$ ),  $F(4, 76) = 0.51, ns$ , and voice ( $R^2 = .05$ ),  $F(4, 35) = 1.03, ns$ , conditions. These findings reveal supportive evidence for the hypothesis investigated here.

## Discussion

As hypothesized, the findings of Experiment 3 show that when people receive no voice information they will judge their procedure to be more just when they had been brought into a positive affective state than when in an affective state that is neither positive nor negative. Findings further show that people who have experienced a procedure that did not communicate voice information will judge the way in which they have been treated to be more unjust when in a negative affective state than when in the control condition. Thus, findings show that both positive and negative affective states may impact people's justice judgments. To put it differently, people in a positive affective state may see the justice of events through rose-colored glasses, whereas those in a negative affective state may do so through dark-colored glasses. Interestingly, a detailed inspection of the means in the no-voice-information condition of Experiment 3 shows that although both the positive and the negative affect conditions differed significantly from the control condition, negative affect differed more strongly from the control condition ( $\eta^2 = .38$ ) than did positive affect ( $\eta^2 = .13$ ). This negativity effect suggests that in the justice domain, negative affect has a stronger impact on people's justice judgments than positive affect. In other words, both rose- and

dark-colored glasses effects can be found, but the latter is stronger than the former.<sup>6</sup>

It is important to note here that it might be argued that anger is so closely connected to the experience of injustice that there is almost a classical conditioning effect between the two, with the result that priming anger will almost automatically lead to strong thoughts of injustice. To assess the validity of this line of reasoning, data were collected among 124 students at Utrecht University using the same experimental paradigm successfully used in previous research (Van Prooijen et al., 2002) to show priming effects on injustice-related thought. After having made anger salient or not, participants' injustice-related thoughts were measured using exactly the same word-fragment completion task successfully used by Van Prooijen et al. (2002) to assess injustice-related thought: Participants were presented with a total of 20 uncompleted Dutch words and were asked to make one Dutch word of each word fragment. Of the 20 word fragments, 6 were constructed in such a way that participants could come up with injustice-related or injustice-unrelated words. For each participant, the total number of injustice-related words was counted. Findings showed that when anger was salient, participants were not more likely to come up with injustice-related words ( $n = 62$ ,  $M = 2.3$ ,  $SD = 1.2$ ) than when anger was not salient ( $n = 62$ ,  $M = 2.3$ ,  $SD = 1.0$ ),  $F(1, 122) = 0.01$ ,  $p = .94$ . Together with the fact that what participants wrote down in Experiments 1 and 2 showed that the affect manipulation did not increase the salience of justice-related issues, this suggests that priming anger does not necessarily make injustice a salient issue to people. Perhaps the relationship between injustice and anger is best conceived of as being asymmetrical, with injustice leading more to the activation of anger-related thoughts than anger leading to the activation of injustice-related thoughts. Future research may want to investigate this implication. Future research should also be aware of the importance of the specifics of inducing affect manipulations and may want to explore the differential effects that possibly can be found when different affect manipulations are used. I hope that the research presented here may thus provide an impetus to the study of the relationship between affect and justice judgments.

### General Discussion

Taken together, the findings of the three experiments show that when people are forming justice judgments and do not have the most relevant information for doing so, their judgments can be influenced by the affective state they were in prior to forming the justice judgments. These effects were found when people were evaluating the justice of an outcome they had received (Experiment 1) and when they were judging the justice of the way in which they had been treated (Experiments 2 and 3), using both social comparison-based manipulations of outcome information (Experiment 1) and non-social comparison-based manipulations of procedural information (Experiments 2 and 3). These effects were also found when effects of positive and negative affective states were compared with a control condition that did not instigate substantially positive or negative affect (Experiment 3).

The findings of all three experiments reported here show that in the justice domain both positive and negative affective states can have an impact on people's justice judgments but mainly do so when the most directly relevant information for constructing these

judgments is missing. When the most directly relevant information is available, people's affective states have weaker effects on justice judgments; in fact, in all three experiments reported here, they had statistically nonsignificant effects. The current findings thus have revealed the crucial role that affect may play in the justice judgment process but also suggest that these effects are especially likely to be found in, perhaps even be limited to, conditions of information uncertainty. This discounts a general halo effect as an alternative explanation of the findings reported here and suggests that by means of the uncertainty management model, building on the role of affect in other domains makes a novel and important application to the justice literature.

The findings of all experiments presented here suggest that when people are uncertain about how to form justice judgments, they may refer to the affective state they were in. In other words, under conditions of information uncertainty, people may consult how they feel about the justice event they are evaluating and, as a result, may experience more positive justice perceptions when in a positive as opposed to a negative affective state. This suggests that people may use affect as information in the process of assessing what is just, or—to be more accurate—what they perceive to be just. These findings thus reveal that justice judgments can be strongly shaped by the temporarily affective state people were in prior to forming the justice judgments. Because in the experiments reported here the affective states into which people had been brought had no logical, objective relationship with the justice judgments they were constructing, this highlights that judgments of justice can be very subjective.<sup>7</sup> This subjective quality of justice judgments can be contrasted with justice theories that conceive of

<sup>6</sup> Interestingly, the negative affect condition had a weaker impact on participants' affective feelings and PANAS ratings than the positive affect condition, whereas the reverse pattern was found (as shown by the results of both the analyses of variance and the regression analyses) on participants' justice judgments, suggesting that perhaps people are reluctant to admit that they are feeling negative but that negative affective states nevertheless have a bigger impact on their subsequent justice judgments than positive affective states. This suggests the possibility of a positivity effect on affective feelings and a negativity effect on other reactions, including justice judgments. What can be concluded on the basis of the findings presented here is that both positive and negative affect conditions were effective in causing effects on people's justice judgments, both differing significantly from the neutral control condition. Future research may want to explore the interplay between affective feelings and justice judgments and their possibly differential susceptibility to positive and negative affect.

<sup>7</sup> Using one's affective responses as information in forming judgments is not necessarily "subjective" if there are rational or functional causes of affective arousal. If, for example, humans typically get angry in unfair situations—even when all of the qualities that make the situation unfair are not consciously available to the individual—then it is perfectly rational to use anger as information in deciding on the fairness of the situation. This is especially so if the individual is not motivated to make a more systematic logical analysis. The fact that there may be times when one's affective state is aroused for non-justice-related reasons does not negate the fact that this response may be functional some or perhaps most of the time. This being said, however, the facts that in the current experiments affective states were unrelated to the justice event people were evaluating and that there were no rational or functional causes of participants' affective arousal get at the subjective quality that justice judgments may have and in all likelihood had in the experiments reported here.

justice judgments as judgments that are primarily the result of rational–cognitive processes. The data presented here highlight the importance of thinking about social justice as a concept that is in the eye of the beholder. It is my hope that the current article may encourage social psychologists to be more explicit about their assumptions of justice being a rational–cognitive or a subjective–affective construct and that the psychological studies presented here may contribute to the multidisciplinary field of social justice by illustrating the ways in which justice judgments can be subjective judgments. All this may help to understand what we are talking about when we talk about social justice.

Previous justice studies argued that under conditions of information uncertainty people may start using other justice information—as heuristic substitutes—in the process of forming justice judgments (Van den Bos, 1999; Van den Bos et al., 1997). The findings reported in the current article are important because they suggest that affect may also substitute for missing justice information. This may imply that in situations of information uncertainty people may form justice judgments by relying on “how-do-I-feel-about-it” heuristics (see Schwarz & Clore, 1983) or affect-infusion processes (see Forgas, 1995, 2002). The affect substitutability effects revealed here indicate that a bigger leap is possible than merely substituting one type of justice information for the other (cf. Van den Bos, 1999; Van den Bos et al., 1997).

Interestingly, following the insights from the current article, reanalyses of the justice substitutability studies suggest that these previous results were mediated by affect. That is, mediation analyses were conducted on both the substitutability effects of procedural justice judgments on outcome justice judgments (Van den Bos et al., 1997) and on the effects of outcome justice judgments on procedural justice judgments (Van den Bos, 1999), and in both data sets satisfaction (taken as an indication of affect; outcome satisfaction in the former study and procedural satisfaction in the latter) mediated the effects, at least partially, in the uncertain conditions and not in the certain conditions (whereas treating satisfaction as the dependent variable and justice judgments as the mediator did not yield significant mediation effects). Thus, in the case of people using procedural justice information to make inferences about outcome justice when direct information on the latter is not available (Van den Bos et al., 1997), the psychological process seems to be that procedural justice judgments lead to outcome satisfaction evaluations that subsequently influence outcome justice judgments. In the case of people using outcome justice information to construct procedural justice judgments when explicit procedure information is missing (Van den Bos, 1999) it seems that outcome justice judgments lead to procedural satisfaction evaluations, which then have an impact on procedural justice judgments. These findings support the important role of affect in the justice judgment process (cf. Scher & Heise, 1993) and may stimulate future research and other reanalyses of earlier published studies.

The empirical research presented here extends the uncertainty management model to be a model truly incorporating both cognitive and affective antecedents of justice judgments. Furthermore, it has been shown here that the concept of information uncertainty, derived from the uncertainty management model, was conducive in studying the function affect may have in the psychology of justice perceptions. As correctly noted by Sinclair and Mark (1992), most previous justice research has addressed the cognitive

basis of justice judgments (see, e.g., Folger, 1986; Messick, 1993; Van den Bos & Lind, 2002) and has paid little attention to the role of affect in perceived justice. The majority of studies on affect and social justice have focused on the effects of justice judgments on affective responses (e.g., Adams, 1965; Scher, 1997; Van den Bos et al., in press; Weiss, Suckow, & Cropanzano, 1999). To the best of my knowledge, only some articles have explored the role of affect as antecedent of justice judgments.

Tanaka and Takimoto (1997), for example, reported that participants judged fair behavior by positive valenced persons to be more frequent and unfair behavior to be less frequent than fair and unfair behavior of negative valenced persons. Sinclair and Mark (1991) showed that participants who prior to the justice judgment process had been brought into elated moods endorsed more egalitarian macrojustice principles than those in depressed moods. Furthermore, fairness judgments of participants in depressed moods differentiated more between various micro- and macrojustice principles than participants in elated moods. Similarly, fairness judgments of participants in Mark and Sinclair (1990, cited in Sinclair & Mark, 1992) who were in a depressed mood differentiated more as a function of various payment arrangements than those who were in an elated mood.

The reason only a relatively small number of justice studies have shown some evidence for the possible influence of affect on the justice judgments process may have to do with the fact that researchers did not make a distinction between situations in which people are certain about how to form justice judgments and conditions under which people are uncertain about this. The research presented here reveals that information certainty is a crucial moderator that should be taken into consideration if one wants to confidently predict and find justice judgments to be influenced by people’s affective states.

Schwarz and Clore (1983) noted that attributing versus not attributing one’s affective feelings to external circumstances may be an important moderator of affect-as-information processes. The current article suggests that information certainty may also be a strong moderator of these effects. If people are certain about the events they have experienced, they are not likely to use “how do I feel about it” heuristics in judgment processes, whereas these heuristics are likely to play an important role when people are uncertain about the justice of the experienced events. Because it can well be argued that information uncertainty plays a crucial role in other social psychological domains, such as social judgment (see, e.g., Kahneman et al., 1982), an implication of the current article may be that future research will show that information certainty is also an important moderator for the phenomena studied in the literature on social cognition and affect (see, e.g., Martin & Clore, 2001), such as affective influences on processing of information (see, e.g., Forgas, 1991, 1995, 2001, 2002) and on memory effects (see, e.g., Bower, 1981). As a result of the research presented here, this implication is now open for empirical investigation, and I hope this may stimulate further interest in the fascinating and important area of inquiry of the role of affect under conditions of uncertainty.

Future research may also want to explore whether in information-certain situations justice judgments are primarily influenced by cognitive or affective factors. That is, when people do have the most relevant justice at their service (e.g., when they know what outcomes comparison others have received or when

they have received explicit procedure information), their justice judgments may, on the one hand, mainly be influenced by the cognitive aspects of this justice information (cf. Van den Bos et al., 1997) or, on the other hand, chiefly be influenced by the affective connotations of the justice events (cf. Scher & Heise, 1993). Studying the relationship between cognition and affect in the psychology of justice judgments may further knowledge about whether justice judgments are primarily the result of cognitive (e.g., Kohlberg, 1969; Piaget, 1932/1975) or affective (e.g., Haidt, 2001; Hume, 1739/1951) factors. Perhaps most intriguing would be if future research would reveal that rather than viewing justice as either a cognitive or an affective concept, the interplay between affect and cognition in perceived justice depends on crucial moderators (such as information uncertainty), highlighting the cognitive aspects of justice in some situations and emphasizing the affective components of perceived justice in other conditions. What the current study has revealed is that affective antecedents may play an important role in the psychology of justice judgments under uncertainty.

One may wonder whether the results of the affect manipulations presented here reflect demand characteristics of the three experiments. There are at least three pieces of evidence that address this concern. First, results show that participants felt generally positive, not just happy, and generally negative, not just angry. This suggests that, as intended, participants were really put in global positive or negative affective states. A demand characteristic process, in contrast, would have led to more specific happiness- or anger-related states.

Second, as hypothesized, the affective state that people were in only had an effect on their justice judgments when they were uncertain about how just their outcome or procedure had been and not when they were certain about the justice of their outcome or procedure. If the manipulation of affect indeed had given participants the impression that they were supposed to use this when forming their justice judgments, as a demand-characteristics explanation would argue, this should have influenced justice judgments in all conditions, at least to some extent, and not only in some conditions. The fact that no influence of affect was found whatsoever in all conditions where the uncertainty management model predicted no effects to be found<sup>8</sup> whereas strong, reliable effects were obtained in the conditions of all three experiments where they were hypothesized to be found argues against a demand-characteristics explanation of the findings reported here.

Third, extensive, funneled debriefing interview procedures (cf. Bargh & Chartrand, 2000) revealed that in all three experiments reported here participants did not experience a direct relationship between the affect manipulation and their reactions to the lottery tickets they received or the way they were treated in the experiments, nor did they experience strong demand characteristics to behave or react in a particular way during the experiments or while giving their justice judgments. This indicates that demand characteristics were not exerting a big impact on justice judgments and suggests that the affect manipulations reported here may be comparable to those by Schwarz and Clore (1983) who used, among other things, weather (sunny vs. rainy) to explore the impact that the resulting affective states (positive vs. negative) may have on people's reactions without people being aware of it. Taken together, it seems reasonable to conclude that the three pieces of evidence discussed here convincingly argue against demand char-

acteristics being an important, plausible alternative explanation of the results of the three experiments presented here.

A close look at the findings reported here suggests that in the information-uncertain conditions, affect had a bigger effect on participants' justice judgments in Experiments 2 and 3 than in Experiment 1. This may have to do with procedural justice judgments being more susceptible to affect information than outcome justice judgments (cf. Tyler et al., 1997). Future research may want to investigate this implication of the current findings. In the information-certain conditions of the current experiments, affect had no statistically significant effects on participants' justice judgments. Future research may want to investigate under what circumstances negative affect leads people to differentiate more between just and unjust conditions than positive affect (cf. Sinclair & Mark, 1991, 1992) and in what situations this is less likely to be the case (cf. the current article). Future research may also want to explore whether other manipulations of justice information (such as ambiguity of justice events; cf. Thibaut & Walker, 1975) moderate the impact of affect as information on justice judgments.

Because pilot testing had shown that people in a sad mood or individuals who are very fearful are more likely to start thinking about death, and because mortality thoughts would yield an alternative explanation of the effects of affective state (see Van den Bos & Miedema, 2000; cf. Rosenblatt et al., 1989), the affect manipulations used here asked participants to think of their being either very happy or very angry. The findings reported in this article indicate that these affect manipulations did not enhance salience of death thoughts, thus ruling out a terror management explanation of the current findings. Furthermore, the affect manipulations used here were successful in influencing the relative strength of participants' affective feelings in ways that were intended with these manipulations. All this being said, however, future research may want to explore the effects of other affect manipulations and other affect conditions on people's justice judgments, because future research may reveal that using different affect manipulations may yield different effects. It is therefore important not to gloss over relevant distinctions between different affects.

It should be noted here that the present study does not provide a narrow test of affect as information (cf. Schwarz & Clore, 1983) in the justice domain. Instead, the current article shows a confirmation of patterns of important effects that have been predicted by the affect-as-information and uncertainty-management frameworks, but these patterns of effects have implications for whether or not these theories hold up in the long run. Indeed, future researchers might productively investigate the psychological processes suggested by the research findings presented here. Most notably, work on affect infusion (e.g., Forgas, 1995, 2002), affect-

<sup>8</sup> Besides the nonsignificant effects that already have been discussed in Experiments 1–3, it can be noted here that when the data of all participants who were in the information certain conditions of Experiments 1–3 were taken together, no effects of being in a positive or negative affective state were found on participants' justice judgments. No significant effects of the affect manipulation (positive vs. negative) were found on participants' justice judgments,  $F(1, 306) = 0.05, p = .83$ , nor did regressing participants' justice judgments on the positive and negative subsets of the affective items and the PANAS yield any effects among these participants ( $R^2 = .01$ ),  $F(4, 303) = 0.58, p = .68$ .

tive priming (e.g., Bower, 1981), the mood-as-information model (Martin, Abend, Sedikides, & Green, 1997), judgment under emotional certainty or uncertainty (Tiedens & Linton, 2001), the social intuitionist model (e.g., Haidt, 2001), sober second thought (J. S. Lerner, Goldberg, & Tetlock, 1998), and justice as morality (e.g., Folger, 2001) may yield different and more precise insights into the psychology of justice judgments and the relationship between social cognition and affect that may not be revealed by the frameworks that happen to have inspired the studies presented here.

At the end of the day, though, at least one aspect of these studies promises to have enduring importance: The three studies revealed that justice judgments can be influenced by the affective state people are in, prior and unrelated to the justice judgment process. This finding stands in sharp contrast to rational–normative approaches to social justice. It seems reasonable, therefore, to conclude that compared with previous social justice studies, the findings of the current article provide very fundamental information with regard to the psychology of social justice. The findings of all three experiments reported here suggest that when constructing justice judgments under conditions of information uncertainty, people may refer to the affective state they were in and, as a result, may experience more positive justice perceptions when in a positive affective state and may indicate more negative justice judgments when in a negative affective state. In this way, the present article highlights the subjective quality of social justice and the role of affect as information in the psychology of justice judgments.

## References

- Adams, J. S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 267–299). New York: Academic Press.
- Ambrose, M. L., & Kulik, C. T. (2001). How do I know that's fair? A categorization approach to fairness judgments. In S. W. Gilliland, D. D. Steiner, & D. P. Skarlicki (Eds.), *Theoretical and cultural perspectives on organizational justice* (pp. 35–62). Greenwich, CT: Information Age Publishing.
- Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle: A practical guide to priming and automaticity research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 253–285). Cambridge, England: Cambridge University Press.
- Berkowitz, L., & Walster, E. (Eds.). (1976). *Advances in experimental social psychology: Vol. 9. Equity theory: Toward a general theory of social interaction*. New York: Academic Press.
- Bless, H., Bohner, G., Schwarz, N., & Strack, F. (1990). Mood and persuasion: A cognitive response analysis. *Personality and Social Psychology Bulletin*, *16*, 331–345.
- Bower, G. H. (1981). Mood and memory. *American Psychologist*, *36*, 129–148.
- 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. *Journal of Personality and Social Psychology*, *75*, 394–407.
- Brockner, J., & Wiesenfeld, B. M. (1996). An integrative framework for explaining reactions to decisions: Interactive effects of outcomes and procedures. *Psychological Bulletin*, *120*, 189–208.
- Cohen, R. L. (1986). *Justice: Views from the social sciences*. New York: Plenum Press.
- Cropanzano, R., & Folger, R. (1989). Referent cognitions and task decision autonomy: Beyond equity theory. *Journal of Applied Psychology*, *74*, 293–299.
- Cropanzano, R., & Folger, R. (1991). Procedural justice and worker motivation. In R. M. Steers & L. W. Porter (Eds.), *Motivation and work behavior* (Vol. 5, pp. 131–143). New York: McGraw-Hill.
- Cropanzano, R., & Greenberg, J. (1997). Progress in organizational justice: Tunneling through the maze. In C. L. Cooper & I. T. Robertson (Eds.), *International review of industrial and organizational psychology* (pp. 317–372). New York: Wiley.
- Folger, R. (1977). Distributive and procedural justice: Combined impact of “voice” and improvement of experienced inequity. *Journal of Personality and Social Psychology*, *35*, 108–119.
- Folger, R. (1986). Rethinking equity theory: A referent cognitions model. In H. M. Bierhoff, R. L. Cohen, & J. Greenberg (Eds.), *Justice in social relations* (pp. 145–162). New York: Plenum Press.
- Folger, R. (2001). Fairness as deonance. In S. Gilliland, D. Steiner, & D. Skarlicki (Eds.), *Theoretical and cultural perspectives on organizational justice* (pp. 3–33). Greenwich, CT: Information Age Publishers.
- Folger, R., & Cropanzano, R. (1998). *Organizational justice and human resource management*. Thousand Oaks, CA: Sage.
- Folger, R., & Konovsky, M. (1989). Effects of procedural and distributive justice on reactions to pay raise decisions. *Academy of Management Journal*, *32*, 115–130.
- Forgas, J. P. (Ed.). (1991). *Emotion and social judgments*. Oxford, England: Pergamon Press.
- Forgas, J. P. (1995). Mood and judgment: The affect infusion model (AIM). *Psychological Bulletin*, *117*, 39–66.
- Forgas, J. P. (Ed.). (2001). *Handbook of affect and social cognition*. Mahwah, NJ: Erlbaum.
- Forgas, J. P. (2002). Feeling and doing: Affective influences on interpersonal behavior. *Psychological Inquiry*, *13*, 1–28.
- Green, J. D., & Sedikides, C. (1999). Affect and self-focused attention revisited: The role of affect orientation. *Personality and Social Psychology Bulletin*, *25*, 104–119.
- Greenberg, J. (1990). Organizational justice: Yesterday, today, and tomorrow. *Journal of Management*, *16*, 399–432.
- Greenberg, J. (1997). A social influence model of employee theft: Beyond the fraud triangle. In R. J. Lewicki, R. J. Bies, & B. H. Sheppard (Eds.), *Research on negotiation in organizations* (Vol. 6, pp. 29–52). Greenwich, CT: JAI Press.
- Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review*, *108*, 814–834.
- Hare, R. M. (1981). *Moral thinking: Its levels, method, and point*. Oxford, England: Clarendon Press.
- Hume, D. (1951). *A treatise of human nature*. Oxford: Clarendon Press. (Original work published 1739)
- Hunton, J. E., Hall, T. W., & Price, K. H. (1998). The value of voice in participative decision making. *Journal of Applied Psychology*, *83*, 788–797.
- Isen, A. M. (2002). Missing in action in the AIM: Positive affect's facilitation of cognitive flexibility, innovation, and problem solving. *Psychological Inquiry*, *13*, 57–64.
- Jasso, G. (1994). Assessing individual and group differences in the sense of justice: Framework and application to gender differences in the justice of earnings. *Social Science Research*, *23*, 368–406.
- Jasso, G. (1999). How much injustice is there in the world? Two new justice indexes. *American Sociological Review*, *64*, 133–168.
- Kagan, J. (1984). *The nature of the child*. New York: Basic Books.
- Kahneman, D., Knetsch, J. L., & Thaler, R. H. (1986). Fairness as a constraint on profit seeking: Entitlements in the market. *The American Economic Review*, *76*, 728–741.
- Kahneman, D., Slovic, P., & Tversky, A. (Eds.). (1982). *Judgment under uncertainty: Heuristics and biases*. New York: Cambridge University Press.

- Kirk, R. E. (1982). *Experimental design: Procedures for the behavioral sciences* (2nd ed.). Belmont, CA: Brooks/Cole.
- Kohlberg, L. (1969). Stage and sequence: The cognitive–developmental approach to socialization. In D. A. Goslin (Ed.), *Handbook of socialization theory and research* (pp. 347–480). Chicago: Rand McNally.
- Lerner, J. S., Goldberg, J. H., & Tetlock, P. E. (1998). Sober second thought: The effects of accountability, anger, and authoritarianism on attributions of responsibility. *Personality and Social Psychology Bulletin*, *24*, 563–574.
- Lerner, M. J., & Mikula, G. (Eds.). (1994). *Entitlement and the affectional bond: Justice in close relationships*. New York: Plenum Press.
- Lind, E. A., Greenberg, J., Scott, K. S., & Welchans, T. D. (2000). The winding road from employee to complainant: Situational and psychological determinants of wrongful termination claims. *Administrative Science Quarterly*, *45*, 557–590.
- Lind, E. A., Kanfer, R., & Earley, P. C. (1990). Voice, control, and procedural justice: Instrumental and noninstrumental concerns in fairness judgments. *Journal of Personality and Social Psychology*, *59*, 952–959.
- Lind, E. A., Kulik, C. T., Ambrose, M., & De Vera Park, M. V. (1993). Individual and corporate dispute resolution: Using procedural fairness as a decision heuristic. *Administrative Science Quarterly*, *38*, 224–251.
- Lind, E. A., & Tyler, T. R. (1988). *The social psychology of procedural justice*. New York: Plenum Press.
- Mackie, D. M., & Worth, L. T. (1989). Processing deficits and the mediation of positive affect in persuasion. *Journal of Personality and Social Psychology*, *57*, 27–40.
- Martin, L. L., Abend, T., Sedikides, C., & Green, J. D. (1997). How would I feel if . . . ? Mood as input to a role fulfillment evaluation process. *Journal of Personality and Social Psychology*, *73*, 242–253.
- Martin, L. L., & Clore, G. L. (2001). *Theories of mood and cognition: A user's guidebook*. Mahwah, NJ: Erlbaum.
- Mayer, J. D., Allen, J. P., & Beaugard, K. (1995). Mood inductions for four specific moods: A procedure employing guided imagery vignettes with music. *Journal of Mental Imagery*, *19*, 133–150.
- Messick, D. M. (1993). Equality as a decision heuristic. In B. A. Mellors & J. Baron (Eds.), *Psychological perspectives on justice: Theory and applications* (pp. 11–31). Cambridge, MA: Cambridge University Press.
- Messick, D. M., & Sentis, K. (1983). Fairness, preference, and fairness biases. In D. M. Messick & K. S. Cook (Eds.), *Equity theory: Psychological and sociological perspectives* (pp. 61–94). New York: Praeger.
- Mikula, G., & Wenzel, M. (2000). Justice and social conflict. *International Journal of Psychology*, *35*, 126–135.
- Patnoster, R., Brame, R., Bachman, R., & Sherman, L. W. (1997). Do fair procedures matter? The effect of procedural justice on spouse assault. *Law and Society Review*, *31*, 163–204.
- Piaget, J. (1975). *The moral judgment of the child*. London: Routledge and Kegan Paul. (Original work published 1932)
- Rawls, J. (1971). *A theory of justice*. Oxford, England: Oxford University Press.
- Rosenblatt, A., Greenberg, J., Solomon, S., Pyszczynski, T., & Lyon, D. (1989). Evidence for terror management theory I: The effects of mortality salience on reactions to those who violate or uphold cultural values. *Journal of Personality and Social Psychology*, *57*, 681–690.
- Sabbagh, C., Dar, Y., & Resh, N. (1994). The structure of social justice judgments: A facet approach. *Social Psychology Quarterly*, *57*, 244–261.
- Scher, S. J. (1997). Measuring the consequences of injustice. *Personality and Social Psychology Bulletin*, *23*, 482–497.
- Scher, S. J., & Heise, D. R. (1993). Affect and the perception of injustice. *Advances in Group Processes*, *10*, 223–252.
- Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, *45*, 513–523.
- Sedikides, C. (1992). Mood as a determinant of attentional forces. *Cognition and Emotion*, *6*, 129–148.
- Sedikides, C. (1995). Central and peripheral self-conceptions are differentially influenced by mood: Tests of the differential sensitivity hypothesis. *Journal of Personality and Social Psychology*, *69*, 759–777.
- Shotter, J. (1989). Rhetoric and the recovery of civil society. *Economy and Society*, *18*, 149–166.
- Sinclair, R. C., & Mark, M. M. (1991). Mood and the endorsement of egalitarian macrojustice versus equity-based microjustice principles. *Personality and Social Psychology Bulletin*, *17*, 369–375.
- Sinclair, R. C., & Mark, M. M. (1992). The influence of mood state on judgment and action: Effects on persuasion, categorization, social justice, person perception, and judgmental accuracy. In L. Martin & A. Tesser (Eds.), *The construction of social judgments* (pp. 165–193). Hillsdale, NJ: Erlbaum.
- Tanaka, K., & Takimoto, S. (1997). Effects of interpersonal affect upon fairness judgment. *Japanese Psychological Research*, *39*, 312–322.
- Thibaut, J., & Walker, L. (1975). *Procedural justice: A psychological analysis*. Hillsdale, NJ: Erlbaum.
- Tiedens, L. Z., & Linton, S. (2001). Judgment under emotional certainty and uncertainty: The effects of specific emotions on information processing. *Journal of Personality and Social Psychology*, *81*, 973–988.
- Turiel, E. (1983). *The development of social knowledge: Morality and convention*. Cambridge, England: Cambridge University Press.
- Tyler, T. R. (1987). Conditions leading to value-expressive effects in judgments of procedural justice: A test of four models. *Journal of Personality and Social Psychology*, *52*, 333–344.
- Tyler, T. R. (1990). *Why do people obey the law? Procedural justice, legitimacy, and compliance*. New Haven, CT: Yale University Press.
- Tyler, T. R., Boeckmann, R. J., Smith, H. J., & Huo, Y. J. (1997). *Social justice in a diverse society*. Boulder, CO: Westview.
- Tyler, T. R., & Lind, E. A. (1992). A relational model of authority in groups. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 115–191). San Diego, CA: Academic Press.
- Tyler, T. R., Rasinski, K. A., & McGraw, K. M. (1985). The influence of perceived injustice on the endorsement of political leaders. *Journal of Applied Social Psychology*, *15*, 700–725.
- Tyler, T. R., & Smith, H. J. (1998). Social justice and social movements. In D. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., Vol. 2, pp. 595–629). Boston: McGraw-Hill.
- 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. *Journal of Experimental Social Psychology*, *35*, 560–577.
- Van den Bos, K. (2001a). Fairness heuristic theory: Assessing the information to which people are reacting has a pivotal role in understanding organizational justice. In S. W. Gilliland, D. D. Steiner, & D. P. Skarlicki (Eds.), *Theoretical and cultural perspectives on organizational justice* (pp. 63–84). Greenwich, CT: Information Age Publishing.
- Van den Bos, K. (2001b). Reactions to perceived fairness: The impact of mortality salience and self-esteem on ratings of negative affect. *Social Justice Research*, *14*, 1–23.
- Van den Bos, K. (2001c). Uncertainty management: The influence of uncertainty salience on reactions to perceived procedural fairness. *Journal of Personality and Social Psychology*, *80*, 931–941.
- Van den Bos, K., & Dechesne, M. (2003). *Exploring the psychology of sadness effects: Mood or mortality salience?* Unpublished manuscript.
- Van den Bos, K., & Lind, E. A. (2002). Uncertainty management by means of fairness judgments. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 34, pp. 1–60). San Diego, CA: Academic Press.
- Van den Bos, K., Lind, E. A., Vermunt, R., & 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. *Journal of Personality and Social Psychology*, *72*, 1034–1046.
- Van den Bos, K., Lind, E. A., & Wilke, H. A. M. (2001). The psychology



- of procedural and distributive justice viewed from the perspective of fairness heuristic theory. In R. Cropanzano (Ed.), *Justice in the workplace: Vol. 2. From theory to practice* (pp. 49–66). Mahwah, NJ: Erlbaum.
- Van den Bos, K., Maas, M., Waldring, I. E., & Semin, G. R. (in press). Toward understanding the psychology of reactions to perceived fairness: The role of affect intensity. *Social Justice Research*.
- Van den Bos, K., & Miedema, J. (2000). Toward understanding why fairness matters: The influence of mortality salience on reactions to procedural fairness. *Journal of Personality and Social Psychology*, *79*, 355–366.
- Van den Bos, K., & Van Prooijen, J.-W. (2001). Referent cognitions theory: The role of closeness of reference points in the psychology of voice. *Journal of Personality and Social Psychology*, *81*, 616–626.
- Van Prooijen, J. -W., Van den Bos, K., & Wilke, H. A. M. (2002). Procedural justice and status: Status salience as antecedent of the fair process effect. *Journal of Personality and Social Psychology*, *83*, 1353–1361.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063–1070.
- Weiss, H. M., Suckow, K., & Cropanzano, R. (1999). Effects of justice conditions on discrete emotions. *Journal of Applied Psychology*, *84*, 786–794.
- Wilson, J. Q. (1993). *The moral sense*. New York: Free Press.

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### Call for Nominations: *Rehabilitation Psychology*

The APA Publications and Communications (P&C) Board has opened nominations for the editorship of *Rehabilitation Psychology* for the years 2006–2011. Bruce Caplan, PhD, is the incumbent editor.

Candidates should be members of APA and should be available to start receiving manuscripts in early 2005 to prepare for issues published in 2006. Please note that the P&C Board encourages participation by members of underrepresented groups in the publication process and would particularly welcome such nominees. Self-nominations are also encouraged.

*Rehabilitation Psychology* will transition from a division publication to an “all APA” journal in 2006, and the successful candidate will be involved in making suggestions to the P&C Board and APA Journals staff about the transition process.

Gary R. VandenBos, PhD, and Mark Appelbaum, PhD, have been appointed as cochairs for this search.

To nominate candidates, prepare a statement of one page or less in support of each candidate. Address all nominations to

*Rehabilitation Psychology* Search Committee  
 Karen Sellman, Search Liaison  
 Room 2004  
 American Psychological Association  
 750 First Street, NE  
 Washington, DC 20002-4242

The first review of nominations will begin December 8, 2003. The deadline for accepting nominations is **December 15, 2003**.