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Procedural Justice as Autonomy Regulation

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The present research investigated the relation between autonomy (i.e., freedom of choice) and procedural justice. Three studies tested the hypothesis that people would be particularly sensitive to the fairness of decision-making procedures when they experience deprivation of autonomy needs. Study 1 indicated that procedural justice judgments indeed were influenced more strongly by variations in decision-making procedures among participants who experienced little autonomy in their life. In Study 2, these findings were conceptually replicated by manipulating whether participants were provided with choice on an issue that was unrelated to the outcomes of the subsequent decision-making process. Study 3 revealed evidence for the hypothesis in a field setting. It is concluded that procedural justice is functional to regulate basic autonomy needs.

Keywords: procedural justice, autonomy, self-determination, fairness, basic psychological needs

In contemporary democratic societies, freedom of choice is considered to be an invaluable aspect of human well-being. People desire a sense of freedom in virtually all life domains and resent the feeling of being pressured into unwanted thoughts or behaviors. The extent to which people feel free to make their own choices and experience a sense of volition in their actions is referred to as people's sense of *autonomy*. Autonomy is a central construct in self-determination theory, which has emphasized the beneficial consequences of experiencing freedom of choice on various dimensions (Deci & Ryan, 1985, 2000). This theory asserts that autonomy is one of the three most basic psychological needs, the other two needs being relatedness (cf. Baumeister & Leary, 1995) and competence (Sheldon, Ryan, & Reis, 1996). These needs are defined as innate psychological necessities that must be satisfied to ensure ongoing mental health, psychological growth, and optimal functioning. In correspondence with this, autonomy has been argued and found to be associated with intrinsic motivation (Deci, Koestner, & Ryan, 1999; Zuckerman, Porac, Lathin, Smith, & Deci, 1978), persistence (Moller, Deci, & Ryan, 2006), goal attainment (Sheldon & Elliot, 1998), and a general increase in subjective well-being (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Sheldon, Ryan, Deci, & Kasser, 2004). Likewise, deprivation of autonomy needs can have a variety of detrimental consequences such as apathy and alienation (for an overview, see Deci & Ryan, 2002).

The extent to which people's autonomy needs are satisfied depends in part on contextual factors such as the extent to which the direct social environment is supportive of autonomy. This implies that external factors can potentially thwart people's autonomy needs, and hence, it makes sense that people are concerned about the development of protective mechanisms that help to buffer against autonomy threats. One such protective mechanism that has been developed by society is the enforcement of moral norms, as moral norms regulate social behavior such that extreme threats to autonomy (e.g., imposing harm) are constrained (Folger, 2001; cf. Rozin, Lowery, Imada, & Haidt, 1999). This autonomy-protective function of moral norms contains a paradox: Moral norms constitute obligations of appropriate conduct, thereby decreasing choice with regard to what behavior is considered acceptable. This paradox was already observed by classic philosophers such as Jean-Jacques Rousseau (1762; Cranston, 1968) and Cesare Beccaria (1764; Paolucci, 1963), who noted that people desire a social contract in which they agree to give up some of their own individual freedoms by developing norms that prescribe what behaviors toward others are unacceptable in order to ensure overall security and happiness. Likewise, Folger (2001) noted that most people prefer a state of "bounded autonomy" in which people's freedom of choice is protected, but at the same time also restricted, by moral obligations to respect other people's autonomy and well-being. Such collective autonomy protection either succeeds or fails depending on the extent to which others also take these moral obligations seriously.

The expectation that others adhere to their moral obligations becomes particularly relevant when interacting with a more powerful individual who is in a position to legitimately exert influence on the autonomy that one experiences. For instance, decision-making authorities often develop policies and rules that dictate what kind of behaviors their subordinates are required to display, raising concerns about autonomy in interactions with these authorities (cf. Van den Bos & Lind, 2002; Van den Bos, Wilke, & Lind, 1998; Van Prooijen, Van den Bos, & Wilke, 2007). Likewise, it has been noted that leaders often are able to exploit followers, and hence, followers are more willing to accept leadership when they can exercise some form of control over leaders to minimize the potential for these autonomy threats (Boehm, 1999; Van Vugt,

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Hogan, & Kaiser, 2008). These considerations suggest that subordinates are concerned about the extent to which authorities will respect their basic autonomy needs. One possible way for authorities to address these concerns is to adhere to their moral obligations by implementing fair decision-making procedures that ensure the rights and dignity of subordinates. The extent to which people feel treated fairly by authorities during a decision-making process is referred to as *procedural justice* (Thibaut & Walker, 1975). Accumulating research indicates that people assign much value to procedural justice, which is reflected in findings that fair decision-making procedures influence a wide range of human perceptions, emotions, and behaviors, and do so across diverse social settings. For instance, procedural justice has been found to increase feelings of being respected, the extent to which subordinates identify with the institutions that the authority represents, and subordinates' willingness to voluntarily display behaviors that benefit these institutions (for overviews, see Brockner & Wiesenfeld, 1996; Cropanzano, Byrne, Bobocel, & Rupp, 2001; De Cremer & Tyler, 2005; Folger & Cropanzano, 1998; Lind & Tyler, 1988; Tyler & Blader, 2000, 2003; Tyler & Lind, 1992; Van den Bos & Lind, 2002).

Although such a relation between autonomy needs and procedural justice may seem plausible, empirical research hitherto has failed to investigate this assumed relation in a satisfactory way. In the present article, I examined the possibility that procedural justice is in fundamental ways related to people's need for autonomy. As such, I pursued two interrelated goals. First, the present work integrates insights derived from self-determination theory with existing knowledge on procedural justice. In particular, I investigate whether people try to regulate their basic autonomy needs by attending to the fairness of decision-making procedures. Hence, the studies presented here were designed to make a novel contribution by investigating to what extent satisfaction or deprivation of autonomy needs have implications for people's fairness-based responses to decision-making procedures. Second, the present research proffers a novel answer to the question of why people care about fair decision-making procedures. For the last three decades, scientists have stressed the importance of understanding why procedural justice matters to people, but the role of autonomy needs has been largely ignored or overlooked in contemporary procedural justice research (e.g., De Cremer & Tyler, 2005; Folger & Cropanzano, 1998; Lind & Tyler, 1988; Thibaut & Walker, 1975; Tyler & Blader, 2003; Tyler & Lind, 1992; Van den Bos & Lind, 2002). I propose that the question of why procedural justice matters cannot be answered in full without taking human autonomy needs into account. In the following, I lay out my line of reasoning in more detail and introduce the specifics of the present research.

Procedural Justice and Autonomy

To determine whether procedures are fair or unfair, people evaluate procedures by means of various criteria. Leventhal (1980) summarized the most prominent of these criteria by postulating that for people to feel treated fairly during a decision-making process, the procedures should (for instance) be consistent between persons, should make accurate use of available information, should be compatible with fundamental moral and ethical values, and should be representative of the basic concerns and values of the parties affected by the decision. These criteria are related to a variety of procedural justice phenomena that have been studied extensively in empirical research. An illustration of a typical procedural justice phenomenon can be found in the effects of voice: People tend to feel that they have been treated fairer following decision-making procedures that allow them an opportunity to voice their opinion as compared with procedures that deny them such an opportunity (Folger, 1977; Folger, Rosenfield, Grove, & Corkran, 1979). Opportunities for voice are considered important for various reasons: For instance, voice opportunities raise outcome expectancies (cf. Houlden, LaTour, Walker, & Thibaut, 1978; Thibaut & Walker, 1975) and communicate positive relational information, such as being respected and appreciated as a valuable member of one's community (e.g., Tyler, 1987; Tyler & Lind, 1992). Voice effects are robust and generalize across methods and samples (Brockner et al., 1998; Folger et al., 1979; Lind, Kanfer, & Earley, 1990; Van den Bos, 2003; Van den Bos et al., 1998; Van Prooijen, Karremans, & Van Beest, 2006; Van Prooijen, Van den Bos, & Wilke, 2004, 2005).

Early interpretations of procedural justice phenomena such as the voice effect emphasized that fair procedures support a feeling of control over the decision-making process. In particular, a line of research instigated by Thibaut and Walker (1975) indicated that control over the outcome in a dispute resolution setting (decision control) and control over the way the evidence is presented (process control) exert independent effects on litigants' reactions to the decision-making process (e.g., Houlden et al., 1978; Thibaut & Walker, 1975). In everyday life, however, people often have to leave ultimate control over the final decision to decision-making authorities. It has therefore been assumed that people desire process control because this might enable them to influence the final decisions. This line of reasoning has been referred to as the "instrumental" perspective, in that its basic proposition is that people value fair procedures (such as voice procedures) because these procedures may enable them to influence the specific outcome of a decision-making process. Given that instrumental perspectives assign a central role to control in procedural justice judgments, it may well be that these perspectives are informative about the relation between autonomy and procedural justice. As such, it is important to note that classic instrumental perspectives are insufficient to fully appreciate the role of autonomy needs in the psychology of procedural justice. In particular, the core assumptions of instrumental perspectives restrict people's desire for control to an attempt of influencing the specific outcome that happens to be at stake in the decision-making process. This focus on control over the immediate outcomes of procedures is conceptually too narrow because it ignores the possibility that procedural justice judgments emerge from a more general desire to address basic autonomy needs. During interactions with decision-making authorities, people have reason to believe that their basic autonomy needs are at stake because authorities often are in the position to pressure recipients into a wide variety of unwanted outcomes, situations, or actions.

Such an asymmetrical interdependence structure between authority and recipients is related to a situation that has been referred to as the "fundamental social dilemma" (Van den Bos et al., 1998; cf. Komorita & Parks, 1994): People often are concerned about the question of whether they can trust others not to take advantage of them. This question is particularly salient when interacting with

authorities, as these authorities often have the power to cause harm by exploiting a recipient or by excluding a recipient from valuable social relationships. Hence, recipients are in many ways vulnerable to coercion exercised by the authority, potentially threatening basic autonomy needs. This fundamental social dilemma constitutes the basis of social-cognitive procedural justice theories such as fairness heuristic theory (Lind, Kulik, Ambrose, & De Vera-Park, 1993; Van den Bos et al., 1998) and the related uncertainty management model (Van den Bos, 2001; Van den Bos & Lind, 2002). According to these theories, people use procedural justice information to psychologically resolve the problems they have in their interactions with authorities because fair or unfair procedures are informative about the extent to which the authority's intentions are benevolent. By derivation, it may therefore be argued that procedural justice is functional for people to gauge the extent to which their autonomy needs are threatened. If a decision-making authority treats recipients in a fair way, for instance by granting them the opportunity to voice an opinion, then recipients may infer that the authority has the intention to support their autonomy instead of forcing them into an unwanted situation through coercion. If an authority treats recipients in an unfair way, for instance by denying them an opportunity to voice an opinion, then recipients may infer that the authority is not autonomy supportive but rather seeks to impose decisions upon them. In summary, recipients are likely to interpret fair versus unfair decision-making procedures as evidence that the authority has the intention to support versus undermine their basic autonomy needs.

The Present Research

In the present research, I tested novel predictions that bridge insights from self-determination theory (Deci & Ryan, 1985, 2000) and insights from procedural justice theories (Lind et al., 1993; Van den Bos & Lind, 2002). On the basis of the theoretical framework described above, it is assumed that autonomy and procedural justice are related in fundamental ways, as procedural justice is expected to be functional for the regulation of basic autonomy needs. My line of reasoning is rooted in self-determination theory's core proposition that autonomy is a basic psychological need that is essential for optimal psychological functioning. Traditionally, the majority of self-determination research focused on the consequences of autonomy need satisfaction for well-being, performance, and intrinsic motivation in goal pursuit (e.g., Deci et al., 1999; Reis et al., 2000; Sheldon et al., 2004). It has also been noted, however, that people actively seek satisfaction of autonomy needs when this need has been thwarted. Notably, Deci and Ryan (2000) proposed that equifinality is a basic property of autonomy needs, which means that "people are persistent in their attempts to satisfy primary needs, devising new paths when old routes no longer work" (p. 248). This notion corresponds to a related body of literature, in which it has been argued that people display reactance when they are deprived of autonomy: People try to regain a sense of freedom when their freedom has been threatened (Brehm & Brehm, 1981). As such, the need for autonomy is regarded as a psychological necessity that continuously needs to be maintained above a minimum level, and people actively seek opportunities in their social environment to compensate for autonomy deprivation.

This compensatory response to autonomy deficiencies has implications for potential differences between people who experience deprivation of autonomy needs versus people whose autonomy needs are satisfied. People can experience deprivations of autonomy both structurally (e.g., being low in trait autonomy; i.e., individual differences in the perception of freedom of choice) and situationally (e.g., being denied choice in a particular situation). It can be inferred that if individuals experience deprivation of autonomy, either structurally or situationally, then they are relatively sensitive to autonomy-related cues in their direct social environment. Such cues may provide opportunities for autonomy regulation: Messages that support one's autonomy help an individual to repair or reconfirm a satisfactory sense of volitional functioning, but messages that threaten one's autonomy may instigate even further moral indignation as people are explicitly denied the opportunity to compensate for autonomy deficiencies. If people's autonomy needs are satisfied, however, then they are less likely to be sensitive to autonomy-related cues in their direct social environment, as there is no incentive to engage in compensation-seeking behavior. In other words, there is not much urgency to regulate the need for autonomy when this need is already fulfilled above a satisfactory level.

Such autonomy-related cues may be found in the quality of the decision-making procedures that are adopted by authorities. Building on the argument that the perceived fairness of decision-making procedures is informative about the extent to which an authority has the intention to behave in ways that are supportive of autonomy (cf. Lind et al., 1993; Van den Bos & Lind, 2002; Van den Bos et al., 1998), I suggest that people attend to the fairness of decision-making procedures more strongly when they experience some deprivation of basic autonomy needs. Importantly, the present line of reasoning would suggest that such increased sensitivity to procedural justice is likely to be found even when the source of autonomy deprivation is *unrelated* to the specific outcomes of the decision-making process. Autonomy is assumed to be a basic psychological need that, when thwarted, may be replenished by providing people with a sense of volition in a seemingly unrelated domain (Deci & Ryan, 2000). Furthermore, procedural justice is assumed to address basic autonomy needs beyond a sense of control over the specific outcomes of the decision-making process. Combining these arguments leads to the prediction that fairness-based responses are increasingly sensitive to decision-making procedures to the extent that recipients (a) structurally experience little choice in their life or (b) recently have been denied choice in a domain that is unrelated to the expected outcomes of the decision-making process. Thus, the general hypothesis to be tested in the present research is that people's fairness-based responses are more sensitive to variations in decision-making procedures when they experience deprivation of autonomy as opposed to when their autonomy needs are fulfilled (Hypothesis 1). This hypothesis was tested in two laboratory experiments (Studies 1 and 2) and one field study (Study 3).

Study 1

The first study was a laboratory experiment in which trait autonomy was measured as an individual-difference variable: Participants responded to a validated scale that is designed to assess the extent to which people experience a sense of choice in their life

(Sheldon, 1995; Sheldon et al., 1996). Low scores on this scale reflect that participants feel structurally deprived of autonomy, in that participants do not experience much choice in their everyday activities. Furthermore, participants encountered a manipulation of a decision-making procedure in the context of a validated experimental procedure in which variations in procedural justice phenomena are investigated. In this procedure, the experimenter either grants versus denies participants an opportunity to voice their opinions about the number of lottery tickets that should be assigned to the participant (Van den Bos, 2001; Van den Bos & Van Prooijen, 2001; Van den Bos et al., 1998; Van Prooijen, Karremans, & Van Beest, 2006; Van Prooijen et al., 2004). The main dependent variables constituted participants' procedural justice judgments, that is, evaluations of how fairly they felt that they were treated by the experimenter.[1] On the basis of the current line of reasoning, it was expected that procedural justice judgments would be influenced more strongly by the manipulation of voice versus no-voice procedures among participants who scored low as opposed to high in trait autonomy.

Method

Participants and design. A total of 90 participants (35 men, 55 women; mean age = 21.23, *SD* = 3.73) were recruited via flyers that were distributed in the VU University's student cafeterias. The hypothesis was tested in a design in which trait autonomy was measured as a continuous independent variable, and procedure was manipulated by randomly assigning participants to voice versus no-voice conditions. The study was conducted simultaneously with two other unrelated studies. The studies lasted approximately 60 min, and participants were paid 7 Euros (approximately $9.50 U.S.) for their participation.

Procedure. Upon arrival at the laboratory, participants were seated in separate cubicles. Inside the cubicles, participants found computer equipment that was used to present the stimulus information and to register the data. Participants were informed that they would take part in several unrelated studies. Participants then began with "Experiment 1," which was presented as a study of life experiences. This study comprised various questionnaires. To measure trait autonomy, participants completed the Choicefulness subscale of the Self Determination Scale (Sheldon, 1995; Sheldon et al., 1996). This five-item scale is designed to measure the extent to which participants experience a sense of choice with respect to their behavior. Each item of the scale presents participants with two opposing statements, and participants are asked to indicate which of the statements feels most true for them. An example item is "I always feel like I choose the things I do" (Statement A) versus "I sometimes feel that it's not really me choosing the things I do" (Statement B) (1 = *only A feels true*; 7 = *only B feels true*). Participants' answers to the items were coded such that low scores indicate experienced choice deprivation, and high scores indicate a strong sense of choice. The items were averaged into a reliable autonomy scale (α = .84; *M* = 5.58, *SD* = 1.08).

After completion of the questionnaire, participants continued with "Experiment 2," which was presented as an unrelated study concerning how people perform tasks. Participants were led to believe that all computers in the lab were connected and that the experimenter (who was allegedly in one of the other cubicles) could send computer messages to all participants during the experiment (in reality, all stimulus information was preprogrammed). Participants were informed that a lottery with a prize of 50 Euros (approximately $68 U.S.) would take place among all participants and that following the tasks, the experimenter would allocate some number of lottery tickets to participants (e.g., Van den Bos, 2001, 2003; Van den Bos et al., 1998; Van Prooijen, De Cremer, et al., 2008; Van Prooijen, Karremans, & Van Beest, 2006; Van Prooijen et al., 2004, 2007).

Participants then continued with the tasks, which entailed counting squares within larger figures (for a detailed description of the tasks, see Van den Bos & Van Prooijen, 2001; Van den Bos et al., 1998; Van Prooijen, Van den Bos, & Wilke, 2002). Participants were instructed to complete as many tasks as possible within 3 min. Following the tasks, the procedure manipulation was induced. Participants in the voice condition were informed that they were allowed an opportunity to voice their opinion about the number of lottery tickets that they thought should be allocated to them. These participants were then asked to type in the number of lottery tickets they believed they should receive. Participants in the no-voice condition were informed that they were not allowed an opportunity to voice their opinion about the number of lottery tickets that they thought should be allocated to them. These participants were not asked to type in the number of lottery tickets they believed they should receive. All participants were then informed that they would receive their lottery tickets at the end of the experiment and that they first would be asked a number of questions. These questions pertained to the dependent variables and manipulation checks.

To measure perceived procedural justice, participants were asked the following three questions: "How fair was the way you were treated by the experimenter?" (1 = *very unfair*, 7 = *very fair*), "How correct were you treated by the experimenter?" (1 = *very incorrect*, 7 = *very correct*), and "How respectful were you treated by the experimenter?" (1 = *not respectful*, 7 = *very respectful*). These three items were averaged into a reliable procedural justice scale (α = .81). To check the procedure manipulation, participants responded to the following two questions (1 = *not at all*, 7 = *very much*): "To what extent did the experimenter allow you an opportunity to voice your opinion about the number

[1] There is an ongoing debate concerning terminology for the perceived fairness of interpersonal treatment. Organizational justice scholars have argued that procedural justice should refer only to the perceived fairness of the formal decision-making structure and that the perceived fairness of treatment should be referred to as interactional justice (e.g., Bies & Moag, 1986; Colquitt, 2001). Other justice scholars, however, have argued that treatment quality is a necessary component of procedural justice judgments, as people attend to both formal decision-making procedures as well as to the quality of interpersonal treatment to evaluate procedural justice (e.g., Tyler & Blader, 2003). In the present article, I adopt the latter (more generalized) terminology. I believe that explicitly distinguishing between procedural and interactional justice makes sense only in organizational settings where there is a formalized decision-making structure and continuous interaction with authorities, enabling people to evaluate formal decision-making procedures separately from their interpersonal contact with the direct supervisor. In situations wherein people interact with a decision maker only once (as in Studies 1 and 2), it is in all likelihood much more difficult for recipients to view the formal decision-making process (e.g., being granted vs. denied voice) separately from the quality of interpersonal treatment.

of lottery tickets that should be allocated to you?" and "How much attention did the experimenter have for your opinion about the number of lottery tickets that should be allocated to you?" These two items were averaged into a reliable procedure check scale ($\alpha = .83$). After this, participants were debriefed, thanked, and paid for their participation.

Results

The results were analyzed with hierarchical regression analyses that specified the main effects of autonomy and procedure in Step 1 and the interaction in Step 2. Participants' scores on the autonomy scale were centered, and the conditions of the procedure manipulation were effect coded (1 for the voice condition, −1 for the no-voice condition). The interaction term was based on the product of the centered autonomy scale and the effect-coded procedure manipulation (Cohen, Cohen, West, & Aiken, 2003).

Manipulation check. The regression analysis on the procedure check scale indicated that only Step 1 accounted for a significant part of the variance ($R^2 = .61$), $F(2, 87) = 69.02$, $p < .001$. Results revealed a significant procedure main effect ($\beta = .78$, $p < .001$). Participants in the voice condition perceived more opportunities to voice their opinion ($M = 5.01$, $SD = 1.23$) than participants in the no-voice condition ($M = 1.91$, $SD = 1.26$). These results suggest that participants perceived the procedure manipulation as intended.

Procedural justice judgments. The analysis of participants' procedural justice judgments indicated that Step 1 accounted for a significant portion of the variance ($R^2 = .15$), $F(2, 87) = 7.91$, $p < .01$. The procedure main effect was significant ($\beta = .39$, $p < .001$), indicating that participants in the voice condition felt that they were treated more fairly by the experimenter ($M = 4.64$, $SD = 1.42$) than were participants in the no-voice condition ($M = 3.50$, $SD = 1.31$). More important was the finding that Step 2 was significant ($\Delta R^2 = .04$), $F(1, 86) = 4.06$, $p < .05$, yielding the predicted interaction term ($\beta = -.20$, $p < .05$).

The Autonomy × Procedure interaction is displayed graphically in Figure 1. To examine the specific nature of this interaction, I conducted simple slopes analyses. In correspondence with the hypothesis, the procedure manipulation exerted a stronger effect among participants who scored low in trait autonomy ($\beta = .56$, $p < .002$) than among participants who scored high in trait autonomy ($\beta = .30$, $p < .03$). These findings support the prediction that people's procedural justice judgments are more sensitive to variations in decision-making procedures to the extent that they feel less autonomous in life.

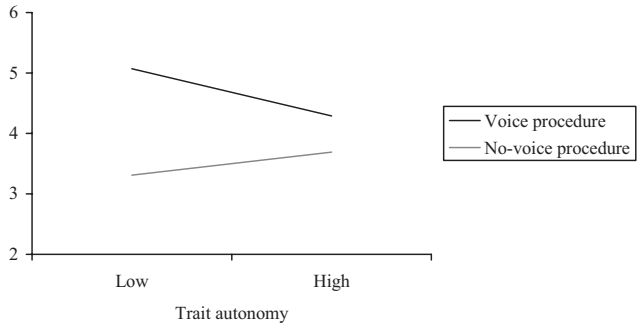

Figure 1. Participants' procedural justice judgments as a function of trait autonomy and procedure in Study 1.

In addition, it may be noted that trait autonomy did not predict procedural justice judgments among participants in the voice condition ($\beta = -.26$, $p > .08$) or among participants in the no-voice condition ($\beta = .15$, $p = .32$). These latter findings suggest that both the voice and no-voice conditions contributed to the emergence of an interaction and underscore that the interaction should be interpreted in terms of the influence of trait autonomy on the relative magnitude of the effects of voice versus no-voice procedures.

Discussion

Study 1 provided preliminary evidence for the hypothesis that variations in decision-making procedures exert a stronger impact on procedural justice judgments among people who experience little as opposed to a lot of choice in their life. A remarkable aspect of this finding is that the trait autonomy scale (Sheldon, 1995; Sheldon et al., 1996) tapped experiences in participants' lives in general, and hence, the scale was fully unrelated to the procedure manipulation and to the specific decision regarding the distribution of lottery tickets. This supports the assertion that autonomy deprivation increases people's sensitivity to decision-making procedures, even when the source of autonomy deprivation is unrelated to the expected outcomes of the decision-making process. The present findings are in correspondence with the idea that people regulate their basic autonomy needs by attending to the fairness of treatment by decision makers. Although promising, the present findings need to be complemented and extended in a second experiment. Instead of measuring autonomy as an individual-difference variable, in Study 2 autonomy was manipulated by providing versus not providing participants with choice regarding an issue that was unrelated to the outcome of the subsequent decision-making procedure.

Study 2

By experimentally manipulating autonomy, Study 2 was designed to extend Study 1 by providing more conclusive evidence for the empirical relation that is under investigation here. Participants responded to a modification of the experimental paradigm of Study 1. The study was again presented as a study on performing tasks. Autonomy was manipulated by providing versus not providing participants with a choice opportunity regarding what kind of task they would perform (cf. Moller et al., 2006). In addition, a control condition was included in which participants were not made aware of choice possibilities. Then, the procedure manipulation was induced orthogonally from the autonomy manipulation: Participants were granted versus denied an opportunity to voice their opinion regarding a decision about how to divide lottery tickets. The main dependent variables again were participants' procedural justice judgments. It was expected that procedural justice judgments would be influenced more strongly by the manipulation of voice versus no-voice procedures among participants in the no-choice condition in comparison to participants in the choice condition.

Method

Participants and design. The hypothesis was tested in a 3 (autonomy: choice versus no choice versus control) × 2 (procedure: voice versus no voice) factorial design. A total of 108 participants (32 men, 76 women; mean age = 20.58; *SD* = 2.62) were recruited via flyers that were distributed in the VU University's student cafeterias. Participants were assigned randomly to one of the six experimental conditions. The study was followed by another unrelated study. Together the studies lasted approximately 30 min, and participants received 3.50 Euros (approximately $4.75 U.S.) for their participation.

Procedure. The experiment took place in the same laboratory as in Study 1. The introduction to the study was the same as the "Experiment 2" portion of Study 1. Before starting with the tasks, the autonomy manipulation was administered. In the choice condition, participants were informed that they would perform one out of two possible tasks: a "contrast sensitivity task" or an "intuitive decision task." Participants were informed that, in general, people tend to evaluate both tasks as equally positive. Furthermore, both tasks were described as equally difficult and time-consuming. Participants were then allowed to choose which task they would perform. In the no-choice condition, participants received the same introduction. However, these participants were informed that they would be assigned to the contrast sensitivity task. In the control condition, no mention of two tasks was made. Participants in this condition were informed that all participants would be performing a contrast sensitivity task. This condition differed from the other two conditions in that no choice opportunities were made salient to the participants.

Participants then proceeded with the task. The actual task was the same for all participants.[2] During the task, a checker-board figure appeared on the computer screen for 10 s. Each figure contained black and white squares that were arranged in a random pattern. After 10 s, participants had to estimate whether there were more black or white squares in the figure (in reality, all figures contained 90 black and 90 white squares; De Gilder & Wilke, 1994). After participants had answered, the next figure appeared on the computer screen. Participants completed eight such tasks. After completion of the tasks, participants were informed that their performance did not deviate much from the performance of most participants. Participants were then asked how much fun and how boring (reverse scored) the tasks were (1 = *not at all*, 7 = *very much*). These two items were averaged into a reliable task evaluation scale (α = .71).

Following the tasks, the procedure manipulation was administered. This manipulation was the same as in Study 1. Participants then responded to the questions that pertained to the dependent variables and manipulation checks. To measure perceived procedural justice, the measure of Experiment 1 was extended with two additional questions. The resulting five-item scale consisted of the following questions: "How fair was the way you were treated by the experimenter?" (1 = *very unfair*, 7 = *very fair*), "How just was the way you were treated by the experimenter?" (1 = *very unjust*, 7 = *very just*), "How appropriate was the way you were treated by the experimenter? (1 = *very inappropriate*, 7 = *very appropriate*), "How correct were you treated by the experimenter?" (1 = *not correct*, 7 = *very correct*), and "How respectful were you treated by the experimenter? (1 = *not respectful*, 7 = *very respectful*). These five items were averaged into a reliable procedural justice scale (α = .91).

The manipulation checks were assessed after the measurement of procedural justice. To check the autonomy manipulation, the following three questions were posed (1 = *not at all*, 7 = *very much*): "To what extent did you feel free to decide for yourself what task you wanted to do?" "To what extent could you choose yourself what task you wanted to do?" and "To what extent did you have the feeling that you could influence what task you would do?" These three items were averaged into a reliable autonomy manipulation check scale (α = .92). To check the procedure manipulation, the same two questions as in Study 1 were posed. Again, these two items were averaged into a reliable procedure manipulation check scale (α = .86). After this, the experiment ended, and participants were fully debriefed, thanked, and paid for their participation.

Results

Manipulation checks. The manipulations were checked with 3 × 2 ANOVAs. The analysis on the autonomy manipulation check scale revealed only a significant autonomy main effect, $F(2, 102) = 118.67$, $p < .001$. According to Tukey's honestly significant difference (HSD) tests, all three conditions differed significantly from one another (all *p*s < .001). Participants in the choice condition experienced more autonomy (*M* = 6.25, *SD* = 0.76) than participants in the no-choice condition (*M* = 1.96, *SD* = 1.15). Participants in the control condition reported less experienced autonomy than participants in the choice condition, but more experienced autonomy than participants in the no-choice condition (*M* = 3.50, *SD* = 1.53). As was intended, explicitly being denied choice (as was the case in the no-choice condition) caused a stronger decrease in experienced autonomy than not being made aware of choice possibilities (as was the case in the control condition).

Analysis of the procedure manipulation check scale revealed only a procedure main effect, $F(1, 102) = 299.11$, $p < .001$. Participants in the voice condition perceived more opportunities for voicing their opinion (*M* = 5.32, *SD* = 1.36) than did participants in the no-voice condition (*M* = 1.51, *SD* = 0.92). These results indicated that participants perceived the two experimental manipulations as intended. Furthermore, the fact that only the intended main effects were observed for the manipulation checks suggest that the attempt to orthogonally induce the autonomy and procedure manipulations was successful.

Choices for tasks. In the choice condition, 15 participants chose the contrast sensitivity task, and 22 participants chose the intuitive decision task. This distribution does not deviate significantly from the expected 50% distribution, $\chi^2(1, N = 15) = 1.32$, $p = .25$. This analysis ensured that participants did not structurally prefer one of the choice options.

Task evaluation. A 3 × 2 ANOVA performed on the task evaluation scale yielded no significant effects. Of particular im-

[2] The descriptions of the "contrast sensitivity task" and the "intuitive decision task" were brief and ambiguous. This ensured that the contingencies of the actual task were in correspondence with both options, enabling all participants in the choice condition to recognize their choice in the nature of the task.

portance was the fact that the autonomy main effect was nonsignificant, $F(2, 102) = 1.11$, $p > .33$. Participants in the various experimental conditions evaluated the task as equally positive or negative. Experienced valence of the task can thus not explain the results reported here.

Procedural justice. The means and standard deviations are displayed in Table 1. As a first analysis, I conducted a 3 × 2 ANOVA on perceived procedural justice. This analysis revealed a significant procedure main effect, $F(1, 102) = 9.41$, $p < .01$, indicating that participants in the voice condition reported higher levels of perceived procedural justice ($M = 4.69$, $SD = 1.29$) than participants in the no-voice condition ($M = 3.93$, $SD = 1.42$). The main effect of autonomy was nonsignificant, $F(2, 102) = 1.58$, $p = .21$. More important was that this analysis indicated a significant interaction, $F(2, 102) = 3.90$, $p < .03$.

I then proceeded to more directly test the hypothesis by means of interaction contrast analyses. The most straightforward test of the hypothesis was the comparison of the procedure effect in the choice condition versus the procedure effect in the no-choice condition. This analysis indicated a significant interaction contrast, $F(1, 102) = 7.63$, $p < .01$. In correspondence with the hypothesis, the procedure simple main effect was significant in the no-choice condition, $F(1, 102) = 13.27$, $p < .001$, but was nonsignificant in the choice condition ($F < 1$). That is, people respond more strongly to voice versus no-voice procedures when they previously had been denied choice in an unrelated domain than when they had been provided with choice in an unrelated domain.

Two other relevant interaction contrasts are the comparison of the procedure effect in the control condition with the procedure effect in (a) the choice condition and (b) the no-choice condition. The first interaction contrast is informative about whether providing choice reduced the relative strength of the procedure manipulation, and the second interaction contrast is informative about whether denying choice magnified the relative strength of the procedure manipulation. The first interaction contrast was nonsignificant, $F(1, 102) = 2.22$, $p > .13$, as was the second interaction contrast, $F(1, 102) = 1.73$, $p = .19$. These analyses indicated that the procedure effect in the control condition was intermediate between the procedure effects in the choice and no-choice conditions.

Thus, the results suggest that both providing and not providing choice contributed to the differential impact of the procedure manipulation in the autonomy conditions. To investigate this possibility further, I examined the effects of autonomy in both procedure conditions. When observing the means displayed in Table 1, it appears that in the no-choice condition, participants displayed an increase in the value that they assigned to voice opportunities when compared with the choice and control conditions. A contrast analysis among participants in the voice condition that pitted the no-choice condition against the choice and control conditions indeed was significant, $F(1, 102) = 5.08$, $p < .03$. Furthermore, the pattern of means suggests that in the choice condition, participants may have responded less negatively to a no-voice procedure as compared with the other two conditions. Indeed, a contrast analysis within the no-voice condition that pitted the choice condition against the no-choice and control conditions was significant, $F(1, 102) = 5.29$, $p < .03$. These analyses suggest that being denied choice causes people to respond more positively to voice procedures and that being provided with choice decreases the negative impact of no-voice procedures.

Discussion

The results provided further support for the general hypothesis that the extent to which people's autonomy needs are thwarted versus satisfied predicts their sensitivity to variations in procedural justice, as procedural justice judgments were influenced more strongly by the procedure manipulation when choice was denied than when choice was provided. Furthermore, inclusion of the control condition suggested that both deprivation and satisfaction of autonomy may be associated with procedural justice: The relative difference between the choice and no-choice conditions was attributable to both a relative decrease in sensitivity to procedural justice when choice had been provided and to a relative increase in sensitivity to procedural justice when choice had not been provided. When deprived of autonomy (i.e., choice has not been provided), results suggested that people increasingly value procedural justice cues that are supportive of their autonomy (i.e., voice procedures). When autonomy has been supported (i.e., choice has been provided), results suggested that people become relatively less sensitive to procedural justice cues that could potentially threaten their autonomy (i.e., no-voice procedures). These latter findings are in correspondence with Study 1, in which both the voice and no-voice conditions contributed to the interactive effect of autonomy and procedure on procedural justice judgments. Taken together, the results obtained in Studies 1 and 2 are consistent with the theoretical notion that people attend to the fairness of

Table 1
Means and Standard Deviations of Participants' Procedural Justice Judgments As a Function of Autonomy and Procedure in Study 2

	Autonomy					
	Choice		Control		No choice	
Procedure	*M*	*SD*	*M*	*SD*	*M*	*SD*
Voice	$4.41_{b,c}$	1.44	$4.40_{b,c}$	1.19	5.31_{a}	1.05
No voice	$4.51_{a,c}$	1.52	3.60_{b}	1.4	$3.68_{b,c}$	1.19

Note. Higher means indicate more positive procedural justice judgments. Means with no subscript in common differ significantly at $p < .05$.

decision-making procedures to regulate their basic autonomy needs.

Manipulating both choice and voice in the same experiment may raise questions about the orthogonality of the experimental manipulations. In the present experiment, however, I found empirical indications that the two manipulations were induced independently. First, the manipulation checks revealed that the autonomy manipulation did not influence the extent to which participants perceived voice opportunities, and the procedure manipulation did not influence the autonomy manipulation check. Thus, both manipulations only exerted the intended main effects on the manipulation checks, which suggests that the manipulations were perceived as independent by the participants. Second, whereas the procedure manipulation exerted a main effect on procedural justice judgments, which is in correspondence with previous research (Folger, 1977; cf. Brockner et al., 1998; Lind et al., 1990; Tyler, 1987; Van den Bos, 2003; Van Prooijen et al., 2004), the autonomy manipulation did not exert such a main effect on procedural justice judgments. These findings suggest that the two manipulations had different psychological implications for participants. In particular, the results were in correspondence with the theoretical notion that manipulating choice directly satisfies versus deprives autonomy needs (Deci & Ryan, 1985) but that procedural justice may serve as a heuristic cue that informs recipients about the extent to which a decision maker has the intention to behave in ways that are supportive of autonomy needs.

Study 3

Study 3 was designed to extend Studies 1 and 2 in three meaningful ways. First, the results of Studies 1 and 2 are limited to the effects of voice versus no-voice procedures. Although these variations in decision-making procedures have a strong and robust influence on justice-based responses and are central to the procedural justice literature, there are more criteria that determine whether people judge procedures to be fair versus unfair (Leventhal, 1980). In addition, voice procedures give recipients a sense of agency, and hence, one might argue that voice procedures are more directly associated with autonomy needs than other procedural justice criteria. In Study 3, I focused on general perceptions of procedural justice instead of specific manipulations of voice versus no-voice procedures. In particular, participants completed a procedural justice scale that was validated by Colquitt (2001), which is designed to assess all of Leventhal's (1980) procedural justice criteria. As such, I examined in Study 3 whether the key hypothesis is corroborated using a broader operational definition of procedural justice.

Second, the results of Studies 1 and 2 are limited to the psychological laboratory and to the specific population of university students. Although laboratory experiments are well suited to investigate the causal influence of theoretical constructs on dependent variables while assuring high internal validity, one may question whether the processes observed in the laboratory generalize to situations outside of the laboratory and to different populations. To evaluate the generalizability of the present findings, I investigated whether further evidence for the present conclusions would be observed outside of the psychological laboratory. Therefore, I tested the present hypothesis among public employees of the government of a large Dutch city, who reported on the extent to which they considered their work to be supportive of autonomy. Study 3 thus extended the previous studies by focusing on public employees rather than on university students and by assessing a real-life indicator of participants' autonomy.

As a third extension, Study 3 focused on the applied implications of the present ideas for organizations. These implications were investigated by examining whether perceived procedural justice would interact with experienced work autonomy to influence various perceptions and behaviors that are important for healthy organizational functioning. Such pro-organizational responses have been associated with both procedural justice (Tyler & Lind, 1992) as well as with organizational implications of self-determination theory (Gagné & Deci, 2005). As pro-organizational perceptions, I measured participants' identification with the organization (Huo, Smith, Tyler, & Lind, 1996) and the extent to which they feel respected by their organization (De Cremer & Tyler, 2005; Sleebos, Ellemers, & De Gilder, 2006). Whereas *identification* refers to the extent to which people psychologically connect themselves to the group, *respect* refers to the extent people believe that the group values and appreciates them. Previous research indeed indicates that identification and respect are empirically related, yet conceptually distinct constructs (e.g., Simon & Stürmer, 2003).

As an indicator of pro-organizational behavior, I assessed the extent to which participants are inclined to report illegal or immoral actions of their colleagues to their superiors. Such "whistle blowing" is an important variable in research on organizational ethics because it facilitates the cessation of wrongdoing in organizations, which may benefit employees, stockholders, and society in general (Micelli, Near, & Schwenk, 1991). Although whistle blowing intentions have been argued to be associated with procedural justice (Near, Dworkin, & Micelli, 1993), the influence of procedural justice on this morality-based behavior is as yet not well documented by empirical social-psychological research. By including whistle blowing intentions as a dependent measure, the present study sought to (a) provide further evidence that procedural justice phenomena hold implications for this important morality-based behavior, and, more important for the present purposes, (b) test whether the relation between autonomy and procedural justice may generalize to pro-organizational behaviors. It is expected that the specified pro-organizational perceptions and behaviors are influenced more strongly by variations in procedural justice among public employees who experience low as opposed to high autonomy in their work.

Method

Participant sample. The study was conducted among public employees of the government of one of the largest cities in the Netherlands. Out of 161 public employees who were initially contacted by means of a telephone call, 113 public employees eventually completed and returned the questionnaire (a response rate of 70.2%). The final sample included 73 men, 35 women, and 5 participants who did not indicate their gender (mean age = 41.99 years, $SD = 9.66$).

Procedure. Public employees were first approached by means of a telephone call to ask whether they were willing to participate in the study. Public employees who agreed to participate would receive the questionnaire and a return envelope in the mail. Par-

ticipants could either send in the questionnaire by means of the return envelope or hand in the questionnaire to a research assistant who visited their department at an announced date. Participation was on a voluntary basis, and participants' answers to the questions were treated as anonymous and confidential.

Questionnaire. The measures were part of a larger questionnaire that also served applied purposes. To measure perceived procedural justice, the seven items developed by Colquitt (2001) to assess procedural justice were administered to the participants. This scale is based on the procedural justice rules proposed by Leventhal (1980). The questions started with "Whenever decisions are taken at my department. . . . ", followed by, for example ". . . I am able to express my thoughts and feelings" ". . . . the employed procedures are applied consistently" and ". . . the decisions are based on accurate information" (1 = *strongly disagree*, 7 = *strongly agree*). The seven items were averaged into a reliable procedural justice scale ($\alpha = .74$).[3]

To measure the extent to which participants experienced a sense of autonomy in their work, they indicated to what extent their employment supported choice on a variety of dimensions. These dimensions included freedom in how to organize the various task demands, how to apply the skills one has acquired, and how to evaluate results. In particular, participants were asked to what extent their work contained the following characteristics (1 = *not at all*, 7 = *very much*): "Freedom to choose your own work methods" "Responsibility" "The opportunity to evaluate the quality of your work yourself" "Variation in the tasks" and "The opportunity to use your capabilities." These five items were averaged into a reliable autonomy scale ($\alpha = .79$).

Organizational identification was measured with three items (1 = *strongly disagree*, 7 = *strongly agree*): "At this moment, I identify with my department" "At this moment, I want to do my best for my department" and "At this moment, I feel connected to my department." These measures were averaged into a reliable measure of organizational identification ($\alpha = .72$).

Perceived respect from the organization was measured with three items (1 = *strongly disagree*, 7 = *strongly agree*): "The department appreciates my contribution" "The department shows consideration for my goals and values" and "The department genuinely cares about my well-being." These three items were averaged into a reliable respect scale ($\alpha = .81$).

To measure whistle blowing, participants were presented with six brief hypothetical scenarios regarding integrity violations committed by a public employee. To ensure realism, all scenarios were based on incidents that in previous years had actually been reported at the city government's Department of Integrity.[4] An example of an integrity violation scenario is the following:

> Coincidently, a relative of the public employee who works at a service desk applies for a license. According to the rules, the relative is legally entitled to this license. But because the public employee privately is at odds with this particular relative, he refuses to grant the license.

The other scenarios described sharing of classified information with unauthorized individuals, searching the government's computer files for information concerning the financial situation of one's ex-wife in order to gain advantage in a custody battle, smoking marijuana while on duty (and while driving a company car), a male public employee sexually harassing a female public employee, and a public employee who was bribed to falsify signatures on a wedding document. After each scenario, participants indicated their agreement to the following statement: "I would report this incident to this public employee's direct supervisor" (1 = *strongly disagree*, 7 = *strongly agree*). Consequently, six items measured the extent to which participants were inclined to "blow the whistle" in response to six diverse integrity violations. These six items were averaged into a reliable whistle blowing scale ($\alpha = .89$).

Results

Exploratory factor analysis. To investigate whether the measurement of autonomy was distinct from the measurement of procedural justice, I first conducted an exploratory factor analysis (principal-axis factoring) on the items that formed the autonomy and procedural justice scales. Given that measures of respect conceptually are closely related to procedural justice (De Cremer & Tyler, 2005), I also included the respect items in this analysis. A three-factor solution with oblimin rotation was imposed a priori according to the theoretical expectation that autonomy, procedural justice, and respect are empirically distinct constructs. These three factors (Eigenvalues > 1.60) had pattern coefficients that supported the notion that autonomy, procedural justice, and respect are empirically distinct. The five autonomy items all had high pattern coefficients ($|f_{ij}| > .40$) on the first factor but not on the second or third factor. This provides empirical evidence that the five autonomy items indeed all reflect the same underlying psychological construct. The three respect items had high pattern coefficients on the second factor but not on the first or third factor; and, out of seven procedural justice items, six had high pattern coefficients on the third but not on the first or second factor. The only deviating item in the procedural justice scale was the item whether the employed procedures are applied consistently; this item did not load well on any factor. To keep Colquitt's (2001) original procedural justice measure intact, I retained this item in the analyses below (results were similar when this item was excluded).

Hierarchical regression analyses. Table 2 displays the means, standard deviations, and intercorrelations for the variables that were assessed in Study 3. In correspondence with Study 1, the hypothesis was tested by means of hierarchical regression analyses. Both the autonomy and procedural justice scales were centered, and the interaction term was based on the product of these centered variables (Cohen et al., 2003). Step 1 tested for main effects, and the interaction was added to the regression model in Step 2.

The results of the hierarchical regression analyses are displayed in Table 3. Step 1 was nonsignificant for whistle blowing ($R^2 = .04$), $F(2, 110) = 2.06$, $p = .13$, but Step 1 was significant for both identification ($R^2 = .21$), $F(2, 110) = 14.76$, $p < .001$, and for

[3] One of the items in the procedural justice scale referred to voice opportunities, and another item referred to process control. It is noteworthy that when these two items (which are arguably most closely associated with autonomy concerns) were dropped from the scale, the analyses still revealed the predicted interactions on the dependent variables.

[4] I thank the Department of Integrity for granting my research assistants access to their files. No public employees of the Department of Integrity were included in the sample.

Table 2
Means, Standard Deviations, and Intercorrelations of the Measures Assessed in Study 3

Measure	*M*	*SD*	1	2	3	4	5
1. Procedural justice	4.51	0.96	—				
2. Autonomy	5.48	0.98	.46***	—			
3. Organizational identification	5.23	1.26	.27**	.46***	—		
4. Perceived respect	4.37	1.28	.40***	.36***	.52***	—	
5. Whistle blowing	5.01	1.61	.19*	.11	.26**	.15	—

*$p < .05$. **$p < .01$. ***$p < .001$.

respect ($R^2 = .20$), $F(2, 110) = 13.50$, $p < .001$. As can be seen in Table 3, the main effect of perceived procedural justice was a significant predictor of perceived respect from the organization, but not of organizational identification. The main effect of autonomy significantly predicted both identification and perceived respect. More important for the present purposes, the Step 2 interaction term was significant for all three dependent variables: for identification ($\Delta R^2 = .04$), $F(1, 109) = 5.23$, $p < .03$; for respect ($\Delta R^2 = .04$), $F(1, 109) = 5.09$, $p < .03$; and for whistle blowing ($\Delta R^2 = .04$), $F(1, 109) = 4.97$, $p < .03$.

The interactions on the three dependent variables are displayed graphically in Figure 2. To examine the nature of these interactions, I conducted simple slopes analyses for all dependent variables. Among participants who scored low in autonomy, procedural justice was a strong and significant predictor of identification ($\beta = .48$, $p < .001$), perceived respect ($\beta = .60$, $p < .001$), and whistle blowing ($\beta = .42$, $p < .01$). Among participants who scored high in autonomy, procedural justice was not a significant predictor of identification ($\beta = -.11$, $p = .41$), perceived respect ($\beta = .13$, $p = .32$), or whistle blowing ($\beta = .03$, $p = .80$). Taken together, these results supported the hypothesis for all dependent variables, replicating and extending the laboratory findings of Studies 1 and 2 in a field setting.

Finally, I tested whether the effects of autonomy were most pronounced following experiences of procedural justice or injustice. Autonomy was not a significant predictor of any of the dependent variables among participants who scored high on the procedural justice scale (all *p*s $> .22$). Among participants who scored low on the procedural justice scale, however, autonomy significantly predicted identification ($\beta = .55$, $p < .001$), respect ($\beta = .51$, $p < .001$), but not whistle blowing ($\beta = .20$, $p = .19$). These different patterns for the dependent variables may be explained by assuming that whistle blowing behaviors are associated with more complex psychological dynamics than perceptual responses, given that whistle blowing behaviors can be costly in terms of potential retaliation (Near et al., 1993). In addition, it can be noted that effects of autonomy on identification and respect are most pronounced in response to procedural *in*justice, which is inconsistent with the results of Studies 1 and 2. I return to this finding below.

Discussion

Study 3 replicated and extended the findings of Studies 1 and 2. Results supported the central hypothesis with a broader operationalization of procedural justice, and in a population of public employees. Furthermore, Study 3 suggested that the interactive effects of procedural justice with autonomy can have substantial implications for organizations. This was evidenced by the fact that the predicted interaction was observed for both pro-organizational perceptions (i.e., identification and respect) and behaviors (i.e., whistle blowing). These pro-organizational perceptions and behaviors are important for healthy organizational functioning (De Cremer & Tyler, 2005; Huo et al., 1996; Micelli et al., 1991; Near et al., 1993; Sleebos et al., 2006). As such, Study 3 strengthens confidence in both the validity and the applicability of the theoretical proposition that people attend to variations in procedural justice to regulate their basic autonomy needs.

Whereas in Studies 1 and 2 the influence of autonomy on procedural justice judgments did not clearly differ for voice versus no-voice procedures, in Study 3 the influence of autonomy on identification and respect was most pronounced in response to procedural *in*justice. This differential finding is most likely caused by subtle differences between experimentally inducing a voice or no-voice procedure versus measuring procedural justice using Colquitt's (2001) procedural justice scale. As noted earlier, voice

Table 3
Results From Hierarchical Regression Analyses in Study 3

	Identification		Perceived respect		Whistle blowing	
Variable	β	*t*(110)	β	*t*(110)	β	*t*(110)
Step 1						
Procedural justice	.08	0.82	.30	3.09**	.17	1.64
Autonomy	.42	4.40***	.22	2.29*	.03	0.31
Step 2		*t*(109)	*t*(109)		*t*(109)	
Procedural Justice × Autonomy	−.20	−2.29*	−.20	−2.26*	−.22	−2.23*

*$p < .05$. **$p < .01$. ***$p < .001$.

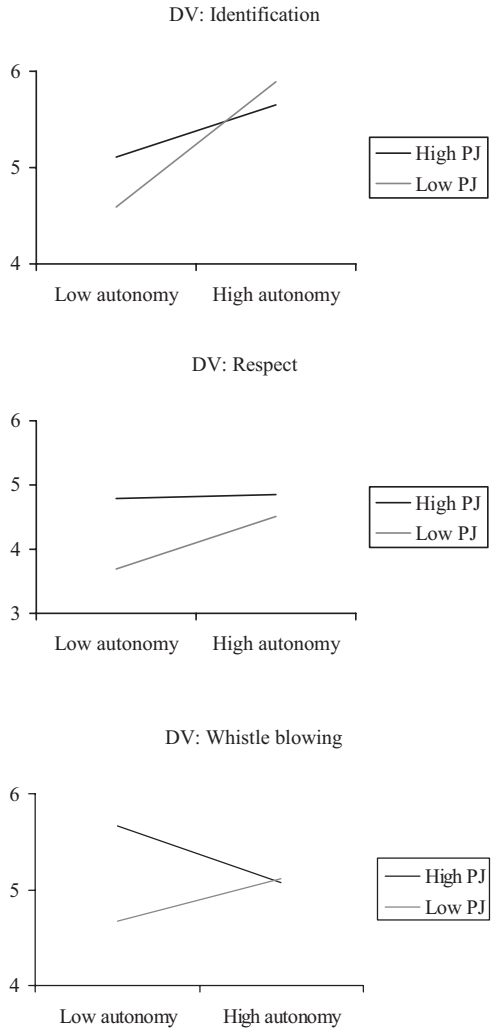

Figure 2. The three dependent variables (DVs) as a function of autonomy and procedural justice (PJ) in Study 3.

procedures may be more closely associated with autonomy than other procedural justice criteria, in that opportunities to voice one's opinion create a sense of agency and active participation. As such, voice procedures may be of particular relevance in buffering oneself against deprivations of autonomy. These specific features of voice procedures are less relevant when measuring a broader range of procedural justice criteria (Leventhal, 1980). Across various procedural justice criteria, people may be particularly sensitive to unfair procedures as a function of the extent to which autonomy needs are thwarted. This possibility is consistent with previous arguments that the negative impact of injustice on perception and behavior is stronger than is the positive impact of justice (Folger, 1984; Folger & Cropanzano, 1998; Van den Bos & Van Prooijen, 2001; Van Prooijen, De Cremer, et al., 2008; Van Prooijen, Van den Bos, Lind, & Wilke, 2006; cf. Baumeister, Bratlavsky, Finkenauer, & Vohs, 2001). Be that as it may, such differential impact of fair versus unfair procedures does not compromise the main conclusion of the present contribution, which is that people are more sensitive to variations in procedural justice when they experience low as opposed to high autonomy in various domains.

General Discussion

The three studies reported herein provided consistent evidence for the proposition that deprivation versus gratification of autonomy needs predicts people's fairness-based responses to decision-making procedures. The general hypothesis was supported when autonomy was measured as an individual-difference variable (Study 1), when autonomy was experimentally manipulated (Study 2), and when autonomy was measured as a property of people's employment (Study 3). Furthermore, the results of the studies converged as a product of manipulations of voice versus no-voice procedures (Studies 1 and 2) as well as assessments of global procedural justice in organizations (Study 3). The findings were replicated both in the laboratory and in a field setting, and the predicted interaction was evident for both procedural justice judgments and for various pro-organizational perceptions (identification and respect) and behaviors (whistle blowing). Taken together, the findings of the three studies support the propositions that the extent to which autonomy needs are satisfied hold implications for people's fairness-based responses to decision-making procedures and that a complete answer to the question of why procedural justice matters to people must take human autonomy needs into account. In particular, the results presented here are in strong agreement with the underlying theoretical claim that people attend to the fairness of decision-making procedures as a means of regulating their basic autonomy needs.

The present findings have theoretical implications for the integration of self-determination theory (Deci & Ryan, 1985, 2000) and procedural justice theories (Lind et al., 1993; Tyler & Blader, 2003; Tyler & Lind, 1992; Van den Bos & Lind, 2002; Van den Bos et al., 1998). According to self-determination theory, people seek fulfillment of three basic psychological needs—autonomy, relatedness, and competence. The present research focused on autonomy needs by revealing that people's fairness-based responses are more sensitive to the way they are treated by authority figures when they are deprived of autonomy. In light of other findings in the procedural justice literature, it is noteworthy that relatedness and competence needs also are substantially related to procedural justice. For instance, researchers have found that procedural justice is functional to regulate one's sense of relatedness, in that fair versus unfair procedures are informative about the extent to which one is included in or excluded from social groups (e.g., De Cremer, 2002; Smith, Tyler, Huo, Ortiz, & Lind, 1998; Tyler, 1994; Van Prooijen, Gallucci, & Toeset, 2008; Van Prooijen et al., 2004). Likewise, empirical research has linked a concern for procedural justice with indicators of one's competence, such as performance-based status (Diekmann, Sondak, & Barsness, 2007; Tyler & Blader, 2002; Van Prooijen et al., 2002, 2005). These previous findings, in conjunction with the findings of the present research, suggest that one of the main reasons why people might care about the fairness of decision-making procedures is because these procedures are functional to inform people about the extent to which the social environment supports versus undermines basic psychological needs. Hence, procedural justice may be more closely associated with social motives and needs than has been recognized before. Further empirical examination may inform

scientists about the more general question of why people care about the fairness of decision-making procedures, and may integrate procedural justice theories with self-determination theory (Deci & Ryan, 1985) and with related theoretical perspectives on social motives and needs (e.g., Fiske, 2004).

The fact that the key hypothesis was tested by means of various research methods (i.e., laboratory experiments and a field study; various operationalizations of independent variables) has at least two noteworthy advantages. First, this variation in research procedures ensures that the present findings are not an artifact of one or the other method, but rather that the present findings reflect a genuine and impactful phenomenon that can be observed in various ways and in a variety of social situations. As such, the observed support for the hypothesis is indicative for the robustness of the present findings. Second, the limitations of one study are complemented by the strengths of other studies. For instance, one might argue that the laboratory setting of Studies 1 and 2 is artificial, raising questions about the extent to which the relation between procedural justice and autonomy has any meaning in everyday life situations. This limitation, however, was addressed in Study 3, which revealed that the present ideas can have far-reaching consequences in a real-life organizational setting. In a similar vein, one might argue that Study 3 rests on correlational findings and is thus subject to questions about causality and alternative explanations (e.g., constructs that may be correlated with the autonomy measure). For instance, public employees with more autonomy may also have more power, or be higher in the organizational hierarchy. These limitations were addressed in Study 2, in which autonomy and procedure were orthogonally manipulated to reveal a causal influence on procedural justice judgments. Furthermore, it seems unlikely that the measure of trait autonomy in Study 1 reflects differences in power or status. As such, the variety of methods that were used here helps to rule out alternative explanations and increases confidence in the validity and applicability of the present conclusions.

Although the present article proposed that autonomy and procedural justice are closely related, it is important to note that a procedural justice manipulation cannot be equated with an autonomy manipulation. Being allowed voice does not automatically imply choice, as authorities do not have to listen to the concerns of subordinates (Lind et al., 1990). Indeed, in a complex social environment where opinions differ substantially among various subordinates, or where painful decisions are necessary for the collective interest, it may be unavoidable for decision makers to disregard the opinions of some or all of the subordinates. Subordinates often are well aware of this, and, as such, it is plausible that subordinates interpret voice opportunities, or other indications that procedures were fair (Leventhal, 1980), as evidence that decision makers are at least willing to make an effort to be supportive of autonomy. Thus, whereas choice opportunities directly address autonomy needs (Deci & Ryan, 1985, 2000; Moller et al., 2006), opportunities to voice an opinion are more likely to be regarded as an indirect heuristic cue to estimate the extent to which a decision maker has the intention to behave in ways that are supportive of autonomy (Lind et al., 1993; Van den Bos et al., 1998). Empirically, the results indeed suggested that autonomy and procedural justice were independent in the present studies. For instance, in Study 2, manipulation checks indicated that the choice and voice manipulations were induced independently. Furthermore, the factor analysis in Study 3 revealed that the items measuring autonomy loaded on a different factor than the items measuring procedural justice. In future research, it would be interesting to find out to what extent procedural justice manipulations are effective in restoring autonomy deficiencies. Establishing such a relation would further refine the model of procedural justice as an autonomy-regulating tool that was presented in the present contribution.

The theoretical rationale that underlies the present work was partly based on social-cognitive procedural justice theories, specifically, fairness heuristic theory (Lind et al., 1993; Van den Bos et al., 1998) and the related uncertainty management model (Van den Bos & Lind, 2002). These theories assign a major role to human uncertainty to explain procedural justice effects, as indicated by findings that feelings of uncertainty increases people's sensitivity to procedural justice manipulations (Van den Bos, 2001; see also De Cremer & Sedikides, 2005). Although these insights contributed to the line of reasoning underlying the present hypothesis, it is important to note that measurements or manipulations of autonomy are not likely to simultaneously measure or manipulate uncertainty. For instance, many empirical studies revealed that low-trait or situational autonomy is associated with numerous detrimental life outcomes (Deci et al., 1999; Deci & Ryan, 2000, 2002; Sheldon et al., 2004), but to the best of my knowledge, no evidence has yet documented that these detrimental effects are mediated by feelings of uncertainty. Also, it does not seem plausible to assume that the effects of the autonomy manipulation in Study 2 are attributable to feelings of uncertainty. That is, feelings of uncertainty generally reflect a desire for meaning and structure in an unpredictable social environment (Van den Bos & Lind, 2002). This does not apply to the autonomy conditions of Study 2, as participants in all conditions knew for certain what task they would perform (in fact, all participants had completed the task before encountering the manipulation of voice versus no-voice procedure). Taken together, it does not seem likely that the present findings can alternatively be explained by the assertion that low autonomy increases feelings of uncertainty.

Indeed, if there were a relation between uncertainty and choice, it would be plausible to argue that excessive choice is associated with increased uncertainty—high choice increases unpredictability in light of unclarity about what choice option would best serve one's goals. As such, in Study 2, I took care to limit individuals' choice options to only two possibilities. Such limitation in the number of choice options is in correspondence with previous research in which positive consequences of choice were studied (Moller et al., 2006; Zuckerman et al., 1978). In this regard, it is noteworthy that empirical research suggests that there indeed are limits to the amount of choice that people consider to be desirable, as people can experience "choice overload" when confronted with too many options. Such choice overload has been found to be demotivating in a variety of situations (Iyengar & Lepper, 2000). These ideas point to interesting avenues for future research designed to further disentangle the relation between choice and procedural justice. For instance, whereas the present research revealed that a modest number of choice opportunities decreases people's responsiveness to procedural justice, one might speculate that an excessive number of choice opportunities would increase people's responsiveness to procedural justice. Justice has been argued to provide structure and meaning to social situations (Van den Bos & Lind, 2002), and hence people may feel a particular

need for justice when they face a situation that is unpredictable given the necessity to choose between an excessive number of options.

The present research may also have theoretical and practical implications for the question of which leaders are effective in coordinating a group toward a collective goal (Van Vugt et al., 2008). Self-determination theory predicts that leaders who are supportive of autonomy will intrinsically motivate followers, thereby increasing team performance (Deci et al., 1999; Gagné & Deci, 2005). This is consistent with research indicating that the unnecessary exercise of control by an external leader can lead to dissatisfaction among members of a self-managing team (Morgeson, 2005). The insights presented here identified a tool that is functional for leaders to behave in an autonomy-supportive way. By implementing fair decision-making procedures—for instance, by listening to the concerns of subordinates, by being transparent, and by exerting efforts to be an unbiased and consistent decision maker—leaders may be able to elicit pro-organizational responses particularly from followers who do not feel very autonomous in their work or other life domains. This insight may be useful to corporate managers, given that pro-organizational responses, such as those investigated in Study 3 of the present contribution, are associated with healthy organizational functioning (cf. De Cremer & Tyler, 2005; Huo et al., 1996; Near et al., 1993).

Furthermore, future research may investigate the extent to which the present findings generalize to other social situations and measures, to more tightly integrate the autonomy and procedural justice domains. In separate lines of research, autonomy and procedural justice both have been shown to shape a variety of human responses in educational settings, health care situations, sports teams, friendships and intimate relationships, and numerous other important life domains (Deci & Ryan, 2000, 2002; Lind & Tyler, 1988; Tyler & Lind, 1992). Informed by the present findings, it seems likely that human perception and behavior in many different situations are influenced by the interplay between autonomy and justice concerns. Furthermore, procedural justice research may start incorporating dependent variables that are typically associated with the self-determination of behavior, such as persistence in goal pursuit, psychological adjustment, and intrinsic motivation. Future research would do well to scrutinize these relations in a wide range of social settings.

To conclude, the present research was initiated to establish an empirical relation between the fundamental human need for autonomy and people's concern for procedural justice. The findings indeed suggest such a relation, supporting a model that predicts procedural justice to be functional for the regulation of autonomy needs. As such, the present research may be informative about broader questions surrounding human morality. For instance, one might speculate that the deprivation of basic psychological needs places people in a psychological state that causes them to evaluate behavior from a moral point of view. That is, deprivation of basic psychological needs (autonomy, belongingness) may be associated in fundamental ways with people's concern for morality, as people may desire a fair decision-making structure that is likely to support these basic psychological needs. The present findings increase the empirical basis for such a fundamental relation between need fulfillment and human morality. It can be concluded that the need for autonomy is important to understand why the quality of decision-making procedures exerts such strong and pervasive effects on fairness judgments and related perceptions and behaviors.

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