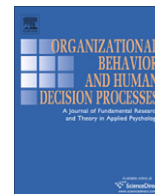




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Procedural justice, interactional justice, and task performance: The mediating role of intrinsic motivation

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ABSTRACT

This manuscript reports the results of two studies, one in the laboratory and one in the field, both of which examined intrinsic motivation as a mediator of the relationship between justice and task performance. Using fairness theory, we argued that procedural justice and interpersonal justice would have significant, independent effects on intrinsic motivation. In general, the results showed that procedural justice predicted both self-reported and free-choice based measures of intrinsic motivation. Procedural justice also predicted task performance, a relationship that was partially mediated by intrinsic motivation. In contrast, interpersonal justice was not significantly related to either intrinsic motivation or task performance. We discuss the implications of these results for the continued integration of the justice and motivation literatures.

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Research in organizational justice, a literature focused on the experience of fairness in organizations and other task-focused environments (Greenberg, 1987), has increased significantly over the past decade (see Colquitt, Greenberg, & Zapata-Phelan, 2005, for a narrative review). One reason for that increase is that perceptions of fair treatment have been linked to a number of beneficial employee behaviors (Conlon, Meyer, & Nowakowski, 2005). For example, meta-analytic reviews have yielded a moderately strong positive relationship between procedural justice, the perceived fairness of decision-making processes (Leventhal, 1980; Thibaut & Walker, 1975), and task performance (Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001). That relationship suggests that taking steps to make decision-making more fair may actually improve individuals' fulfillment of task duties.

Despite the practical importance of the procedural justice–task performance relationship, justice scholars have devoted surprisingly little attention to the theoretical mechanisms that could explain such results (Colquitt, Greenberg, & Scott, 2005). Indeed, scholars have spent much more time providing a conceptual rationale for the relationships between justice and other beneficial

behaviors, such as organizational citizenship behaviors, rule compliance, cooperation, and deference to authority (Lind, 2001; Moorman & Byrne, 2005; Tyler & Blader, 2000; Tyler & Lind, 1992). Part of that disparity in theoretical attention might be explained by the fact that earlier reviews of the justice literature were somewhat pessimistic about the ability of justice to influence task performance (Lind & Tyler, 1988). Nevertheless, without understanding the mediators that underlie the justice–task performance relationship, it is impossible to understand why fair treatment can have positive task-related consequences.

One potential mediator of the justice–task performance relationship is motivation. Latham and Pinder (2005) defined motivation as a set of energetic forces that initiates task-related behavior and determines its form, direction, intensity, and duration. One might expect that the motivational consequences of justice would be well-understood given that justice concepts are often discussed in narrative reviews of the motivation literature (Kanfer, 1991; Latham & Pinder, 2005). However, that association with the motivation literature is largely due to distributive justice, the perceived fairness of decision outcomes (Adams, 1965; Homans, 1961; Leventhal, 1976), as equity theory is viewed as one of the more venerable motivation theories. With few exceptions (e.g., Bell, Wiechmann, & Ryan, 2006; Colquitt & Chertkoff, 2002), scholars have failed to examine the motivational consequences of other justice dimensions. Indeed, in a recent review, Colquitt and Greenberg (2003) asked “Why is it that job satisfaction and organizational commitment are popular dependent variables in justice research, but motivation is virtually ignored?” (p. 99). Similarly, Cropanzano

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and Rupp (2003) asked “Wherefore organizational justice amidst theories of work motivation?” (p. 91).

The purpose of the present research was to examine a motivation-based explanation for the relationship between justice and task performance. We focused on procedural justice given that it has the strongest zero-order and independent relationships with task performance in meta-analytic reviews (Cohen-Charash & Spector, 2001; Colquitt et al., 2001). However, we also included interpersonal justice, which reflects the perceived fairness of the interpersonal treatment received during an authority’s enactment of procedures (Bies & Moag, 1986). In contrast to procedural justice, the task performance benefits of interpersonal justice remain unclear. Meta-analytic estimates revealed near-zero correlations with task performance but were based on very few studies (Cohen-Charash & Spector, 2001; Colquitt et al., 2001). Studies that have been published subsequent to those meta-analyses have sometimes yielded non-significant relationships between interpersonal justice and task performance (Colquitt, Scott, Judge, & Shaw, 2006; Kickul, Lester, & Finkl, 2002; Weaver & Conlon, 2003) and other times yielded significant relationships (Cropanzano, Prehar, & Chen, 2002; Ramaswami & Singh, 2003; Rupp & Cropanzano, 2002). Including interpersonal justice in our study therefore helps to extend our understanding of the potential performance effects of fair interpersonal treatment.

More specifically, the present research examined whether high levels of procedural and interpersonal justice could foster a sense of *intrinsic motivation* that would be positively associated with task performance. Intrinsic motivation exists when performing a task serves as its own reward, due to a sense of enjoyment and pleasure (Deci, Koestner, & Ryan, 1999). Intrinsic motivation therefore involves the experience of positive affect while tasks are being completed (Izard, 1977; Pretty & Seligman, 1984; Reeve, Cole, & Olson, 1986; Vallerand, 1997). We focused our investigation on intrinsic motivation for two reasons. First, intrinsic motivation offers a complement to the more extrinsic focus of equity theory and distributive justice, thereby broadening our understanding of justice and motivation. Second, past research has shown that procedural and interpersonal justice have significant effects on affect and emotions (Cropanzano, Weiss, Suckow, & Grandey, 2000; Krehbiel & Cropanzano, 2000; Weiss, Suckow, & Cropanzano, 1999), which gives those justice dimensions a potential relevance to intrinsic motivation. Below, we offer conceptual support for intrinsic motivation as a mediator of the justice–task performance relationship and describe two studies—one in the lab and one in the field—that test that prediction.

Theory and hypotheses

The topic of intrinsic motivation has been researched by a number of scholars in a number of different literatures. Deci and colleagues examined the topic in their tests of self-determination theory, which focuses on how the fulfillment of specific human needs impacts the regulation of behavior (Deci & Ryan, 2000; Deci et al., 1999). Hackman and Oldham (1980) examined the topic in their tests of job characteristics theory, which focuses on qualities of jobs that can inspire a cycle of motivation powered by self-generating (rather than external) rewards for good work. Intrinsic motivation concepts can also be found in Csikszentmihalyi’s (1997) work on “flow”—a state in which individuals become so involved and immersed in task activities that they lose track of time. Finally, intrinsic motivation concepts have been incorporated into the literature on psychological empowerment, described as an active motivational orientation in which an individual wishes to (and is able to) shape his or her work role (Spreitzer, 1995; Thomas & Velthouse, 1990).

Although there are some differences in these perspectives, most acknowledge that positive affect is a core element of intrinsic motivation (Deci & Ryan, 1985; Izard, 1977; Pretty & Seligman, 1984; Reeve et al., 1986; Vallerand, 1997). For example, Deci and Ryan (1985, p. 34) stated, “emotions are integrally related to intrinsic motivation”. Their statement is reflected in self-report measures of intrinsic motivation (for examples, see Guay et al., 2000; Van Yperen & Hagedoorn, 2003), which assess interest and enjoyment as key components (Deci & Ryan, 1985). Interest and enjoyment are very similar to two facets of positive affect—enthusiasm and excitement (Watson & Tellegen, 1985). Similarly, flow is described as having two components—elation and excitement—that are also found in conceptualizations of positive affect (Csikszentmihalyi, 1990, 1997). Empirical research also illustrates that positive affect is a core element of intrinsic motivation. For instance, Reeve et al. (1986) asked participants to list several of their favorite activities, along with the emotions associated with the activities. Their results demonstrated that excitement, an emotion commonly used to depict intense positive affect (Watson & Tellegen, 1985), was the primary emotion associated with intrinsically motivating tasks. Thus, both previous theorizing and subsequent research demonstrate that affect is a central component to intrinsic motivation and flow-like experiences (Pretty & Seligman, 1984; Seo, Barrett, & Bartunek, 2004).

Of course, the question remains, are procedural and interpersonal justice likely to impact intrinsic motivation? We suggest that they are, because justice has a significant impact on felt emotions. Theoretical grounding for the effects of justice on emotions can be taken from fairness theory, a theory that subsumes an earlier model called referent cognitions theory (Folger, 1986a, 1986b, 1993; Folger & Cropanzano, 1998, 2001). Both fairness theory (Folger & Cropanzano, 1998, 2001) and referent cognitions theory (Folger, 1986a, 1986b, 1993) focus on the cognitions that lead one to appraise an event as either fair or unfair, and the affective reactions that result from these perceptions (see also Cropanzano et al., 2000). Specifically, fairness theory states that individuals evaluate the fairness of an event by working through a series of three counterfactuals (i.e., possible events contrary to the facts), determining whether the outcome “could” have been different, “should” have been different, or “would” have been different (Folger & Cropanzano, 1998, 2001). For example, an event is typically deemed fair if the decision-maker should not have acted any differently, presumably because his or her actions are morally correct, and if a more favorable outcome would not have resulted if events had played out differently. According to fairness theory, positive emotions, such as joy and happiness, should result from this type of positive counterfactual thinking (Cropanzano et al., 2000). Fairness theory also predicts that negative emotional consequences, such as blame, anger, and resentment, will occur when individuals feel an authority should have—and could have—acted differently, and if their well being would have improved under those alternative circumstances (Cropanzano et al., 2000). Thus, according to fairness theory, any event can trigger counterfactual thinking and subsequent emotions, including both positive and negative emotions (Cropanzano et al., 2000). Using fairness theory’s predictions about justice and emotions, we propose that procedural and interpersonal justice could have a significant impact on intrinsic motivation.

Justice and intrinsic motivation

Procedural justice is fostered when decision-making processes adhere to a number of specific rules. For example, procedures should utilize accurate information, be consistent across persons and time, be unbiased, offer mechanisms for correction, represent key groups’ concerns, and adhere to prevailing ethical standards

(Leventhal, 1980). Procedures should also offer individuals some control over the decision-making process, in the form of voice or input, and some control over the eventual outcome, in the form of decision influence (Thibaut & Walker, 1975, 1978). These procedural criteria are particularly relevant to the “should” and “could” components of fairness theory. If an authority enacts procedures that fail to adhere to the rules of accuracy, ethicality, bias suppression, consistency, representativeness, and correctability, then it becomes easy to think that the event should have been different. When decision-making procedures are inconsistent across persons and time, the individuals affected by those procedures can easily see that the event could have played out differently. In the language of fairness theory, a violation of procedural justice rules violates “basic moral tenets” (Folger & Cropanzano, 2001, p. 21).

In accordance with fairness theory’s predictions, previous research has demonstrated that procedural justice does indeed have emotional consequences. Murphy and Tyler (2008) examined the effects of procedural justice on both positive and negative emotions using two different studies. Using data from a variety of organizations, Murphy and Tyler demonstrated that employees’ perceptions of procedural justice were associated with more frequent positive emotions, such as happiness. Murphy and Tyler also collected data from taxpayers involved in a taxation dispute. The results of this study showed that perceptions of procedural justice were associated with less frequent negative emotions. In a recent laboratory study, DeCremer and Stouten (2005) found that participants in the high procedural justice condition exhibited stronger positive emotions than those participants in the low procedural justice condition. Using clients of an outplacement service firm, Barclay, Skarlicki, and Pugh (2005) examined the effects of procedural justice on outward-focused negative emotions such as anger and hostility. As expected, their results demonstrated that procedural justice was negatively related to those emotions (see also DeCremer, 2006; DeCremer & Stouten, 2005). Taken together, these studies demonstrate a significant effect of procedural justice on both positive and negative emotions.

Interpersonal justice is fostered when authorities adhere to specific rules of fair interpersonal communication—rules that were derived from studies of communication during recruitment efforts (Bies & Moag, 1986). Specifically, Bies and Moag (1986) argued that authorities should treat others with respect and should refrain from making improper statements (see also Greenberg, 1993). If one experiences a violation of the respect and propriety rules, then it is clear that ethical standards for the enactment of decision-making procedures were not followed. In the language of fairness theory, this type of violation suggests that the authority should have acted differently. Moreover, adhering to respect and propriety rules is likely under the authority’s direct control, thereby indicating that perhaps the authority could have acted differently.

Consistent with what would be expected from fairness theory (Folger & Cropanzano, 1998, 2001), research has demonstrated a significant relationship between interpersonal justice and emotions. For example, Chebat and Slusarczyk (2005) surveyed bank customers on the treatment they had received during service encounters. Their results demonstrated that fair interactions were more frequently associated with positive emotions (e.g., joy) and less frequently associated with negative emotions (e.g., anxiety) (see also Rupp & Spencer, 2006). Using a longitudinal design with daily measurements, Judge, Scott, and Ilies (2006) found that interpersonal justice was negatively associated with hostility. Similarly, Barclay et al. (2005) found that fair interactions were significantly related to negative emotions. Taken together, these results suggest that interpersonal justice does influence both positive and negative emotions.

If authority figures are capable of eliciting positive and negative emotions in others via their adherence to or violation of procedural

and interpersonal justice standards, then the question becomes: “How might the affective reactions associated with procedural and interpersonal justice influence enjoyment and pleasure of a task at hand?” According to Schwarz and Clore (1983, 1996), affective states serve informative functions, as individuals utilize their current affective states as information to evaluate how they feel about a given stimulus. During experiences of positive affect, stimuli are appraised more positively; during experiences of negative affect, stimuli are appraised more negatively. Applied to the current studies, this suggests that a fairly treated individual (who feels positive affect as a result) will tend to evaluate a given task at hand as more enjoyable and hence more intrinsically motivating. In contrast, an unfairly treated individual (who feels negative affect as a result) will tend to evaluate a given task at hand as less enjoyable and hence less intrinsically motivating. As a result of these motivational disparities, fairly treated individuals should exhibit greater task persistence than unfairly treated individuals. On this point, Martin, Ward, Achee, and Wyer (1993) found that individuals in positive moods persisted longer on tasks than individuals in negative moods, presumably to maintain their positive affective state. Taken together, we thus propose that one potential reaction to procedural and interpersonal justice rule adherence is an increase in intrinsic motivation. We therefore predicted:

Hypothesis 1. Procedural justice is positively related to intrinsic motivation.

Hypothesis 2. Interpersonal justice is positively related to intrinsic motivation.

Intrinsic motivation as a mediator of the justice-performance relationship

As noted at the outset, meta-analytic reviews have revealed a moderate positive relationship between procedural justice and task performance (Cohen-Charash & Spector, 2001; Colquitt et al., 2001). In contrast, the relationship between interpersonal justice and task performance has received relatively mixed support, with some studies supporting a significant relationship (Cropanzano et al., 2002; Ramaswami & Singh, 2003; Rupp & Cropanzano, 2002) and others failing to demonstrate a significant effect (Colquitt et al., 2006; Kickul et al., 2002; Weaver & Conlon, 2003). If procedural and interpersonal justice are indeed related to intrinsic motivation, then intrinsic motivation might explain the procedural justice effect on task performance while shedding insights into potential interpersonal justice effects. Of course, examining that mediating role requires demonstrating that intrinsic motivation and task performance are themselves related.

When considering the potential consequences of intrinsic motivation for task performance, it is important to note the distinction between “type of motivation” and “amount of motivation”. Although several models make this distinction (see Carver & Scheier, 1998; Elliot & Church, 1997; Higgins, 1996), self-determination theory, a theory of motivation that focuses on motives that drive behavior regulation, has one of the most descriptive taxonomies of motivation (Deci & Ryan, 1985, 2000). According to Deci and Ryan (1985), motives for engaging in behavior can be separated into two types, extrinsic (i.e., activity for the sake of something that lies outside of the task) and intrinsic (i.e., activity for its own sake), with extrinsic motivation consisting of three subtypes. The first form of extrinsic motivation is external motivation, which suggests that behavioral regulation occurs because of specific external contingencies, such as avoiding punishment or seeking rewards (Deci & Ryan, 2000). Introjected motivation suggests that behavior is contingent on internal consequences, such as avoiding feelings of guilt or shame, while identified motivation suggests that the

behavior occurs because it is seen as valuable and important (Deci & Ryan, 2000). Deci and Ryan (2000) conceptualize these motives as a continuum, ranging from least autonomous (external motivation) to most autonomous (intrinsic motivation). We describe these other forms of motivation to emphasize that intrinsically motivated individuals do not necessarily have higher levels of “total motivation” than extrinsically motivated individuals.

Although the amount of motivation may not differ for intrinsically motivated individuals, scholars suggest that the quality of functioning will (Deci & Ryan, 2000). Previous research has consistently demonstrated that individuals who are intrinsically motivated have better concentration, learning, recall, cognitive flexibility, and creativity than individuals who are extrinsically motivated, particularly when that extrinsic motivation assumes either the external or introjected forms (for reviews, see Deci & Ryan, 2000; Vallerand, 1997). In addition, because extrinsically motivated behavior is guided by contingencies outside of the task itself, the behavior is more vulnerable to outside forces (e.g., withdrawal of contingencies) than intrinsically motivated behavior (Deci & Ryan, 1985). Scholars in the area of psychological empowerment have also suggested that internal motivation can result in increased activity, concentration, initiative, resiliency, and flexibility, all of which should benefit task performance (Thomas & Veltouse, 1990). Consistent with these theoretical arguments, Spreitzer (1995) linked psychological empowerment to subordinate perceptions of management task performance. Possibly because of the positive affect associated with it (Isen & Reeve, 2005), intrinsic motivation has also been shown to have stronger effects than external motivation on the persistence of effort—a key predictor of performance on complex tasks (Deci & Ryan, 2000; Vallerand, 1997). As another example, Hackman and Oldham (1980) suggested that a sense of internal work motivation would be positively related to the quality of task performance. In support of this view, Piccolo and Colquitt (2006) linked a measure of internal work motivation to supervisor ratings of task performance.

Such results, coupled with the predicted relationships between justice and intrinsic motivation, suggest that intrinsic motivation could serve as a mediator of the justice–task performance relationship. We should clarify, however, that such mediation should only be partial in nature given that one mechanism is incapable of fully explaining a given relationship. Indeed, it may be that procedural and interpersonal justice are also related to the extrinsic forms of motivation described by self-determination theory (Deci & Ryan, 2000), thereby supplying other mediators of the justice–task performance relationship. Still other mediators may be found outside of the motivational realm altogether (Colquitt et al., 2005). We therefore offer the following partial mediation predictions:

Hypothesis 3. Intrinsic motivation will partially mediate the relationship between procedural justice and task performance.

Hypothesis 4. Intrinsic motivation will partially mediate the relationship between interpersonal justice and task performance.

Study 1

Study 1 tested our four hypotheses in a laboratory environment. The laboratory setting allowed us to randomly assign participants to the procedural and interpersonal justice conditions, taking advantage of random assignment’s ability to maximize internal validity by ruling out alternative explanations for significant effects (Kerlinger & Lee, 2000). Almost as importantly, the laboratory setting allowed us to create behavioral measures of intrinsic motivation and task performance, lessening the reliance on self-report measures. The organizational justice literature has been fairly balanced in its use of laboratory and field methods (Cohen-Charash

and Spector (2001) and Van den Bos (2001) emphasized the continued need for that balance for the further accumulation of knowledge about justice effects.

Methods

Sample

The participants were 277 undergraduates from a large, southeastern university recruited from an introductory management course. The participants included 167 females and 110 males, with ethnic breakdowns as follows: 192 Caucasian, 35 Hispanic, 27 Asian/Pacific Islander, 14 African-American, and 6 reporting mixed ethnicity. Three participants failed to report their ethnicity. Participants were given extra credit in exchange for their participation.

Procedure

Upon entering the laboratory, participants were seated at one of six individual work stations, each separated on two sides by partitions to prevent participants from monitoring one another’s responses and behaviors. The experimenter provided a cover story, informing participants that the purpose of the study was to examine the effects of individual characteristics on problem solving ability. The participants were informed that they could earn anywhere from one extra credit point to three extra credit points, depending on how they performed on two 15-min anagram (i.e., word jumble) tasks. Two points should be noted about this variation in extra credit points. First, procedural justice research requires the creation of a resource allocation context that can be executed in either a fair or unfair manner. Extra credit points provided the resource to be allocated, with the procedure referenced to the anagram task grading. Second, scholars continue to debate whether performance-contingent rewards undermine intrinsic motivation for interesting tasks (see the most recent meta-analysis by Deci et al., 1999, with replies by Eisenberger, Pierce, and Cameron (1999), Lepper, Henderlong, and Gingras (1999)). If such undermining occurred in this study, it would have done so across all conditions and would not have biased the effects of the justice manipulations in any way.

Participants were first given 3 min to work on a set of five practice anagrams, in order to familiarize themselves with the tasks. The experimenter then asked participants if they had any questions to ensure that all participants were aware of the task requirements. Once the practice trials had been completed, participants were given a self-report measure of intrinsic motivation with respect to anagram tasks, embedded in a series of distractor items. This measure provided a baseline level of intrinsic motivation for use as a control variable. The participants then completed the first 15-min anagram task, consisting of 15 different anagrams. This task provided a baseline level of task performance, again to serve as a control variable. We should note that the use of baseline assessments as controls has potential strengths but also potential weaknesses. The primary strength of using a baseline assessment as a control is an increase in statistical power (Cohen, Cohen, West, & Aiken, 2003). While controlling for initial motivation and performance does not alter the incremental effect of the independent variable, it does explain more variance (due to the removal of extraneous variance), thereby increasing statistical power (Cohen et al., 2003). However, two points should be noted about our use of baseline assessments. First, these assessments were not strictly necessary given that random assignment equalizes experimental conditions on all variables other than the manipulations. Second, the use of baseline assessments can sometimes sensitize participants to the focus of the study by providing cues about the participants’ expected performance. In view of the potential drawbacks to using baseline measures, we have reported our results both with and without baseline measures as controls.

At the conclusion of the anagram task, the experimenter retreated to the back of the room to grade the tasks. At this point, the experimenter instructed the participants that they could work on a set of new anagrams that were optional and would not count toward the extra credit, that they could read one of three different magazines (*People*, *Science*, or *Rolling Stone*), or that they could relax. Both the optional anagrams and the magazines were sitting in an inbox tray on the participants' desks. While the experimenter was grading the anagrams, he or she monitored whether participants worked on the optional anagrams. This choice of optional anagrams, reading magazines, or relaxation matches the typical paradigm used to assess free-choice intrinsic motivation and captures Deci and Ryan's (1980) operational definition of intrinsically motivated behaviors: "those that are performed in the absence of any apparent external contingency... typically measured by observing behavioral persistence in a free-choice period following the removal of rewards or constraints" (p. 43). As with the measures described above, this index provided a baseline level of intrinsic motivation for use as a control variable.

After 10 min, the experimenter delivered the justice manipulations. Procedural and interpersonal justice were manipulated by the experimenter via four possible statements, resulting in a 2 × 2 between-subjects design with participants randomly assigned to conditions. The procedural justice statements concerned the grading of the first anagram task. Four of the 15 anagrams contained multiple correct solutions. For example, "bgnie" could be "begin", "being", or "binge", and "seert" could be "trees", "steer", or "reset". In the high procedural justice condition, the experimenter announced to the participants:

You may have noticed that a few of the anagrams actually had more than one possible answer. For the first four weeks of the study, I accepted multiple answers as long as they were actual words. This time I did the exact same thing. So if you came up with a word that differed from my answer key, you still got credit for that problem.

In the low procedural justice condition, the experimenter announced to the participants:

You may have realized while working on the anagrams that a few of them actually had more than one possible answer. For the first four weeks of the study, I accepted multiple answers to the anagram tasks, as long as they were actual words. However, this time I only accepted one specific answer for each one. If you came up with a word that did not match that specific answer, then you got that problem wrong.

The procedural justice manipulation therefore varied Leventhal's (1980) accuracy and consistency rules, with the unjust condition having inaccurate grading that was inconsistent with past sessions. Our emphasis on Leventhal's (1980) rules for operationalizing procedural justice is similar to manipulations used by Van den Bos and colleagues, which often emphasize the accuracy rule (Van den Bos, Bruins, Wilke, & Dronkert, 1999; Van den Bos, Vermunt, & Wilke, 1997). The psychological meaningfulness of this manipulation to participants can be explained using fairness theory's mechanisms (Folger & Cropanzano, 1998, 2001). The violation of the consistency and accuracy rules conveys to participants that the experimenter should have acted differently, because critical rules of fair process were not followed. In addition, the violation of the consistency rule conveys to participants that the experimenter could have acted differently, because multiple answers had been accepted in the past. The experimenter then returned the graded anagram tasks, with all participants told that they scored at the 50th percentile of the participants thus far, putting them on track for two extra credit points. The scoring feedback

was held completely constant across all participants so as to not influence perceptions of competence or related motivational variables.

Interpersonal justice was manipulated using the respectfulness and propriety rules of authority communication (Bies & Moag, 1986; Colquitt, 2001; Greenberg, 1993). In the high interpersonal justice condition, the experimenter followed the procedural justice manipulation by saying:

You know, I understand that students are very busy, and there are a lot of other things you could be doing besides helping us out. We really appreciate your time. Thanks a lot for volunteering and taking part today.

In the low interpersonal justice condition, the experimenter went on to say:

Like you care. I'm getting sick and tired of running all these sessions—I have better things to do. It's not like undergrads even understand why we do these studies—all you care about is your extra credit. You can all get one point for all I care.

The unjust condition therefore included interpersonal communication that was both disrespectful and rude to the participants (Bies, 2005; Bies & Moag, 1986). Once again, the psychological meaningfulness of this manipulation to participants can be explained using fairness theory's mechanisms (Folger & Cropanzano, 1998, 2001). The violation of the respect and propriety rules conveys to participants that the experimenter should have acted differently, because critical standards for the enactment of decision-making procedures were not followed.

After the manipulations, participants completed a second questionnaire, which again included a self-report measure of intrinsic motivation embedded in a series of distractors. Participants then completed another 15-min anagram task, which provided the index of task performance. Once that task had been completed, participants were informed that the experimenter would grade the second anagram task. As before, participants could either work on an optional set of new anagrams that would not count toward the extra credit, read a magazine, or relax. The experimenter again observed whether the participants worked on the anagrams, providing a second measure of free-choice intrinsic motivation. This second free-choice measure clearly supplied the removal of rewards or constraints suggested by Deci and Ryan (1980), as there was not even any practice value for the optional anagrams given that the extra credit was already being decided.

After 10 min, the participants were given a final questionnaire that contained the manipulation checks embedded in a series of distractors. The participants were then debriefed, with all instances of deception explained in full and complete detail. Participant reactions were elicited after the debriefing to make sure that the manipulations were credible and the cover story of the study remained intact. Consistent with our institutional review board requirements, the participants were asked to sign the debriefing form to indicate their understanding of the information and their continued willingness to have their data used in the study. All participants gave this consent. Finally, the participants were told that they would receive the full three points of extra credit, regardless of their experimental condition or their performance on the anagram tasks.

Measures

Intrinsic motivation. We included both self-report and free-choice behavior measures of intrinsic motivation. Deci et al.'s (1999) meta-analysis showed that both measures have been used with similar frequency in the literature (for example, of the studies examining the effects of performance-contingent rewards on

intrinsic motivation, 29 used a self-report measure and 32 used free-choice behavior). Deci et al.'s (1999) review also showed that results sometimes diverge across measure types (for example, the undermining effect of performance-contingent rewards on intrinsic motivation was found for free-choice behavior but not for self-report measures), leading the authors to suggest that both types of measures be included in future studies. Self-reported intrinsic motivation was measured with the scale used by Van Yperen and Hagedoorn (2003), adapted from Vallerand et al. (1992) Academic Motivation Scale. We adapted the scale for use with anagram tasks, with participants asked why they would exert effort on the anagram task. Items included: "Because I feel pleasant doing this task", "For the intense pleasure I feel while I am doing the task", "Because I feel a lot of personal satisfaction while mastering certain difficult skills", "For the pleasure I feel while improving some of my weak points", "For the pleasure of doing new things", and "For the pleasure of developing new skills". All items used a response scale of 1 = *Strongly Disagree* to 5 = *Strongly Agree* and the scale had a coefficient α of .86 for both administrations. Free-choice intrinsic motivation was assessed with a procedure similar to the one used by Deci and colleagues (Deci & Ryan, 1980). During the free-choice periods, the experimenter rated the degree to which participants worked on the anagrams rather than reading magazines or relaxing. The experimenter made this rating using the following scale: 1 = *All Magazines/Relaxation*, 2 = *Mostly Magazines/Relaxation*, 3 = *Equal Anagrams and Magazines/Relaxation*, 4 = *Mostly Anagrams*, and 5 = *All Anagrams*.

Task performance. Task performance was assessed using the number of anagrams correctly solved during the two 15-min anagram tasks. The score could potentially range from 0 (no anagrams solved) to 15 (all anagrams solved). It is important to note that task performance did not reference the anagrams solved during either free-choice period, as participants were instructed that their extra credit was based solely on the two 15-min tasks.

Manipulation checks. All manipulation checks used a response scale of 1 = *Strongly Disagree* to 5 = *Strongly Agree*. To check the adequacy of the procedural justice manipulation, participants were asked to indicate their agreement with this statement: "The experimenter seemed to grade the anagram tasks in a consistent and accurate manner." To check the adequacy of the interpersonal justice manipulation, participants were asked to indicate their agreement to this statement: "The experimenter spoke to us with dignity and courtesy when discussing the anagram task." We also included a three-item measure of global fairness perceptions, to verify that the manipulations of the procedural and interpersonal justice rules translated into feelings of fair and unfair treatment. The items included "In general, the experiment was fair", "Overall, I felt that this experiment was done fairly", and "If asked, I would tell other students that this experiment was fair." The coefficient α for this scale was .92.

Results and discussion

Descriptive statistics

Table 1 presents the means, standard deviations, and zero-order correlations among the variables in Study 1. The coefficient α s for self-reported intrinsic motivation are shown on the diagonal. While the correlations between self-reported and free-choice intrinsic motivation measures may seem surprisingly low (.13 for Time 1 and .16 for Time 2), it should be noted that Deci et al.'s (1999) meta-analysis only revealed a .32 meta-analytic correlation between the two types of measures. One potential explanation for the relatively low correlation between these two types of measures is that a free-choice measure is necessarily broader

than a self-report measure because it only shows whether or not participants engaged in task directed effort. In fact, scholars have suggested that free-choice measures may capture other forms of motivation, rather than just intrinsic motivation (Deci, Eghrari, Patrick, & Leone, 1994; Ryan, Koestner, & Deci, 1991). For example, free-choice measures may also capture identified or introjected motives for engaging in the task (Deci et al., 1994; Ryan et al., 1991).

If one compares free-choice and self-reported measures, it becomes clear that self-reported scales can detect more nuances than free-choice measures. Self-report measures typically ask participants why they chose to engage in task-related effort, with items geared toward specific motivational dimensions. That is, some items explicitly reflect only intrinsic motivation (e.g., "Because I like it"), other items explicitly reflect only identified motivation (e.g., "Because it is important to me"), with still other items explicitly reflecting only introjected motivation (e.g., "Because I would feel guilty if I did not"). Given that the two measuring strategies may be picking up different portions of the intrinsic motivation construct, scholars have maintained that both should be included in laboratory research on that topic (e.g., Deci et al., 1994; Elliot & Harackiewicz, 1996).

Manipulation checks

An ANOVA revealed a strong main effect of the interpersonal justice manipulation on the interpersonal check ($F(1,276) = 135.03, p < .001, M = 4.52$ vs. $3.20, \eta^2 = .33$), a non-significant effect on the procedural check ($F(1,276) = 2.18, p = .14, M = 3.55$ vs. $3.32, \eta^2 = .01$) and no significant interactions. An ANOVA also revealed a strong main effect of the procedural justice manipulation on the procedural check ($F(1,276) = 39.45, p < .001, M = 3.85$ vs. $3.08, \eta^2 = .13$), a weaker main effect on the interpersonal check ($F(1,276) = 12.96, p < .001, M = 4.17$ vs. $3.69, \eta^2 = .04$), and no significant interactions. Although there was some spillover in the case of the procedural manipulation and the interpersonal check, the difference between the intended and unintended effects seemed large enough to provide an unambiguous evaluation of the experiment's results (Perdue & Summers, 1986). Nonetheless, we controlled for the spillover using the method described by Colquitt et al. (2006), where the shared variance with the interpersonal check is removed from the procedural manipulation. In no case did this form of control alter our tests of hypotheses. In addition, the two manipulations explained 24% of the variance in global fairness perceptions, with both procedural justice ($B = .66, p < .001$) and interpersonal justice ($B = .57, p < .001$) having effects of similar magnitudes.

Tests of hypotheses

Hypothesis 1 predicted that procedural justice would be positively related to intrinsic motivation and Hypothesis 2 made the same prediction for interpersonal justice. We tested these hypotheses using both self-reported intrinsic motivation and free-choice intrinsic motivation. Our hypothesis tests were performed with and without controlling for the baseline levels of the relevant variables. Recall that the use of baseline assessments can improve statistical power but also raises concerns over participant priming. The regressions used to test Hypotheses 1 and 2 are shown in Table 2. The left side of the table depicts our results using our baseline controls, while the right side of the table omits the controls. Both analyses use dummy variables representing the justice manipulations. As shown in Table 2, the procedural justice manipulation explained significant variance in free-choice intrinsic motivation, with or without controlling for the baseline assessment. However, the procedural justice manipulation only had a significant effect on self-reported intrinsic motivation when the baseline version was controlled. Hypothesis 1 was therefore partially supported. In con-

Table 1
Descriptive statistics and zero-order correlations for Study 1

Variable	M	SD	1	2	3	4	5	6	7
1. Procedural justice	.47	.50	—						
2. Interpersonal justice	.55	.50	.08	—					
3. Self-reported intrinsic motivation (Time 1)	3.38	.70	-.10	-.07	(.86)				
4. Self-reported intrinsic motivation (Time 2)	3.34	.69	.04	-.08	.79 [†]	(.86)			
5. Free-choice intrinsic motivation (Time 1)	3.83	1.58	.08	-.08	.13 [†]	.16 [†]	—		
6. Free-choice intrinsic motivation (Time 2)	2.94	1.79	.15 [†]	-.10	.13 [†]	.16 [†]	.56 [†]	—	
7. Task performance (Time 1)	9.99	1.31	.06	.03	.10	.10	.03	.00	—
8. Task performance (Time 2)	10.01	1.23	.18 [†]	-.01	.13 [†]	.16 [†]	.12 [†]	.16 [†]	.36 [†]

Note. $n = 277$.

[†] $p < .05$, two-tailed.

Table 2
Justice and intrinsic motivation for Study 1

Regression step	Self-reported intrinsic motivation (Time 2)			Self-reported intrinsic motivation (Time 2)		
	R^2	ΔR^2	B	R^2	ΔR^2	B
1. Self-reported intrinsic motivation (Time 1)	.64 [†]	.64 [†]	.79 [†]	—	—	—
2. Procedural justice	.66 [†]	.02 [†]	.16 [†]	.01	.01	.06
Interpersonal justice			-.05			-.12
Regression step	Free-choice intrinsic motivation (Time 2)			Free-choice intrinsic motivation (Time 2)		
	R^2	ΔR^2	B	R^2	ΔR^2	B
1. Free-choice intrinsic motivation (Time 1)	.31 [†]	.31 [†]	.64 [†]	—	—	—
2. Procedural justice	.33 [†]	.02 [†]	.41 [†]	.04 [†]	.04 [†]	.58 [†]
Interpersonal justice			-.20			-.39

Note. $n = 277$. B 's represent unstandardized regression coefficients.

[†] $p < .05$, two-tailed.

trast, interpersonal justice did not predict either measure of intrinsic motivation, failing to support Hypothesis 2.

Hypothesis 3 predicted that intrinsic motivation would partially mediate the relationship between procedural justice and task performance and Hypothesis 4 made the same prediction for interpersonal justice. We tested these predictions using the self-reported intrinsic motivation variable given that it was, unlike the free-choice version, measured before task performance. The self-reported measure thereby supplied the temporal precedence assumed in mediation predictions. Hypothesis 4 could not be supported given the non-significant effects of interpersonal justice on intrinsic motivation. With respect to Hypothesis 3, recall that the analyses that omitted the baseline control failed to demonstrate a significant relationship between procedural justice and self-reported intrinsic motivation. Therefore, Hypothesis 3 was tested using the baseline controls for both intrinsic motivation and task performance. We tested Hypothesis 3 using structural equation modeling with manifest variables in LISREL 8.52 (Jöreskog & Sörbom, 1996). The results of the structural equation modeling are shown in Fig. 1, which provides the unstandardized regression coefficients for each path and LISREL's effect decomposition breakdowns for the independent variables. The fit statistics indicated a strong fit for the model and were as follows: χ^2 (2, $N = 277$) = .44, $p = .80$; CFI = 1.00; SRMR = .01, RMSEA = .01. Good model fit is typically inferred when CFI is close to .95 or higher, SRMR close to .08 or lower, and RMSEA is close to .06 or lower (Hu & Bentler, 1999).

Fig. 1 provides several pieces of information used to test Hypothesis 3. MacKinnon, Lockwood, Hoffman, West, and Sheets (2002) reviewed the various approaches used to test mediation, finding that the Baron and Kenny (1986) "causal steps" approach suffered from low statistical power. The authors instead recommended "The best balance of Type I error and statistical power across all cases is the test of the joint significance of the two effects comprising the intervening variable effect" using unstandardized

coefficients (p. 2002). Fig. 1 provides that joint significance information in the form of LISREL's effect decomposition statistics. That breakdown reveals that, in addition to its significant total effect (.43) and direct effect (.39), procedural justice had a significant indirect effect on task performance (.04). That significant indirect effect provides the joint significance that MacKinnon et al. (2002) recommend using to test mediation. It should be noted that these results are to be interpreted with caution because our predictions were only supported when we included the baseline measure of intrinsic motivation as a control.

Study 2

Study 2 attempted to replicate the results of Study 1 in a field setting. Although many of the justice relationships reviewed in Cohen-Charash and Spector (2000) meta-analysis generalized from laboratory to field settings, the procedural justice–task performance relationship did differ significantly across settings (with the relationship stronger in the field than in the laboratory). In particular, it is important to explore whether the findings for the anagram tasks generalize to organizational settings where task are more complex and multifaceted. It is also important to explore whether the intrinsic motivation results generalize to contexts where task efforts are governed by a variety of motivational forces and constraints.

Methods

Sample

The participants were 189 employees from a variety of industries, including information technology, healthcare, banking, financial services, telecommunications, pharmaceuticals, engineering, and construction. The participants included 64 females and 125 males, with ethnic breakdowns as follows: 136 Caucasian, 25 Hispanic, 18 Asian/Pacific Islander, 3 African-American, and 1 report-

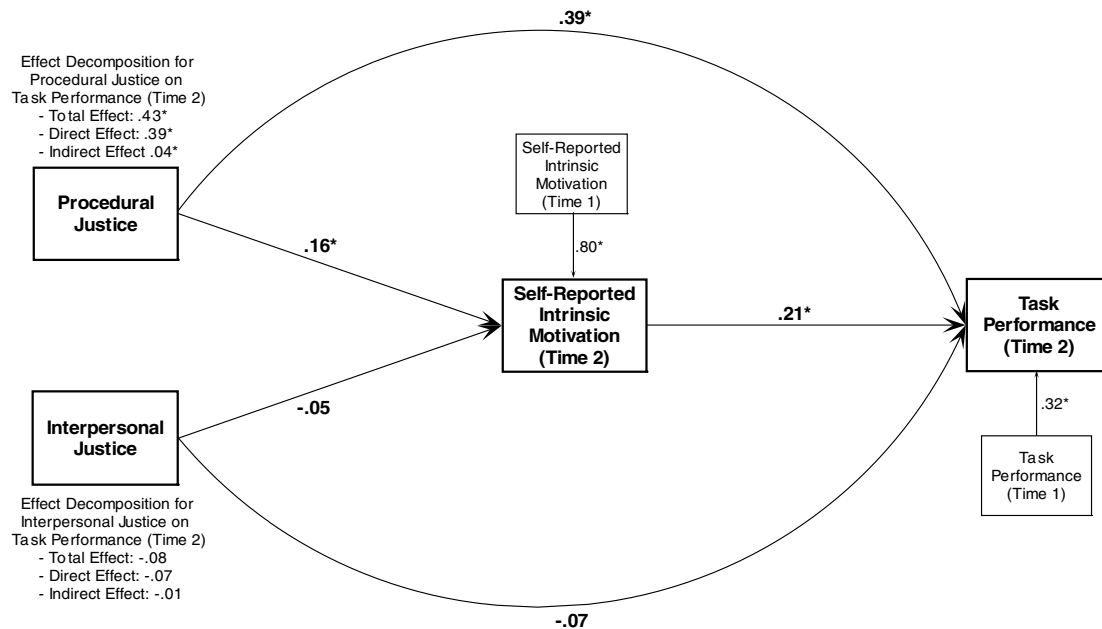


Fig. 1. Mediation analyses for Study 1 using self-reported intrinsic motivation. Values represent unstandardized path coefficients. $n = 277$. $p < .05$, one-tailed.

ing mixed ethnicity. Six participants failed to report their ethnicity. The participants were 31 years old on average ($SD = 6.23$) and had been with their organizations for an average of 4.21 years ($SD = 3.92$).

Procedure

One hundred forty-nine of the 189 participants were recruited from a weekend MBA program at a large, southeastern university. All of these participants were full-time employees who visited campus one weekend per month. The remaining 40 participants were recruited from an online BS/BA program. All of these participants were also full-time employees who never visited the college campus, instead viewing lectures online during nights or weekends. The research project was described as an investigation of the relationship between job attitudes and job behaviors. The individuals were given a packet containing two surveys—one to be filled out by the employee and one to be filled out by his or her supervisor. They were instructed to fill out the employee survey, containing the justice and intrinsic motivation measures, and return it in the postage paid envelope provided. The employees were paid \$5 in exchange for their participation. They were then instructed to give the supervisor survey, containing the task performance measure, to the person who is most directly responsible for completing their annual performance reviews, and to have that person return it in the postage paid envelope provided. The supervisors were paid \$3 in exchange for their participation.

Packets were given to a total of 266 employees with 189 returned for a response rate of 71%. Of the 189 employees who returned surveys, 150 of them (80%) also had the supervisor survey returned, resulting in an overall response rate of 56%. We conducted a handwriting analysis to verify that different individuals completed the supervisor and subordinate measures. In one case, the supervisor survey was typed and we were therefore unable to analyze handwriting. Of the remaining 150 participants, two of the surveys had some handwriting similarities and some differences (e.g., the way the numbers were written). We were therefore unable to determine with certainty whether they were completed by different individuals. Excluding these individuals did not alter the tests of our hypotheses.

Measures

Procedural justice. Procedural justice was measured using the scale developed and validated by Colquitt (2001). Participants were asked about the procedures used to make decisions about their pay, evaluations, promotions, rewards, etc. The items assessed adherence to Leventhal's (1980) and Thibaut and Walker's (1975) justice rules. The seven-item scale included: "Are you able to express your views and feelings during those procedures?", "Can you influence the decisions arrived at by those procedures?", "Are those procedures applied consistently?", "Are those procedures free of bias?", "Are those procedures based on accurate information?", "Are you able to appeal the decisions arrived at by those procedures?" and "Do those procedures uphold ethical and moral standards?" All items used a response scale ranging from 1 = *To a Very Small Extent* to 5 = *To a Very Large Extent*, with a coefficient α of .85.

Interpersonal justice. Interpersonal justice was measured using the scale developed and validated by Colquitt (2001). Participants were asked about the interpersonal treatment received from their managers. The items assessed adherence to Bies and Moag's (1986) respect and propriety rules (see also Greenberg, 1993). The four-item scale included: "Has your supervisor treated you in a polite manner?", "Has your supervisor treated you with dignity?", "Has your supervisor treated you with respect", and "Has your supervisor refrained from improper remarks or comments?" All items used a response scale ranging from 1 = *To a Very Small Extent* to 5 = *To a Very Large Extent*, with a coefficient α of .91.

Intrinsic motivation. Intrinsic motivation was assessed using the four-item intrinsic motivation subscale of the Situational Motivation Scale (SIMS) developed by Guay, Vallerand, and Blanchard (2000). Participants were asked to consider the effort they exert on their job tasks, and why exactly they exert that level of effort. Scale items included: "Because I think that my job tasks are interesting", "Because I think that my job tasks are pleasant", "Because I think that my job tasks are fun", and "Because I feel good when I do my job tasks". All items used a response scale ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*, with a coefficient α of .80.

Task performance. Supervisors rated their employees' task performance using the 7-item scale developed by Williams and Anderson (1991). Scale items included: "Adequately completes assigned duties", "Fulfills responsibilities specified in job description", "Performs tasks that are expected of him/her", "Meets formal requirements of the job", "Engages in activities that will directly improve his/her performance", "Neglects aspects of the job that he/she is obligated to perform" (reverse-scored), and "Fails to perform essential duties" (reverse-scored). All items used a response scale ranging from 1 = *Strongly Disagree* to 5 = *Strongly Agree*, with a coefficient α of .83.

Results and discussion

Descriptive statistics

Table 3 presents the means, standard deviations, and zero-order correlations among the variables in Study 2. The coefficient α s for each scale are shown on the diagonal.

Tests of Hypotheses

Hypothesis 1 predicted that procedural justice would be positively related to intrinsic motivation and **Hypothesis 2** made the same prediction for interpersonal justice. The regression used to test **Hypotheses 1 and 2** is shown in Table 4. Procedural justice explained significant variance in intrinsic motivation, supporting **Hypothesis 1**. In contrast, interpersonal justice did not predict intrinsic motivation, failing to support **Hypothesis 2**.

Hypothesis 3 predicted that intrinsic motivation would partially mediate the relationship between procedural justice and task performance and **Hypothesis 4** made the same prediction for interpersonal justice. **Hypothesis 4** could not be supported given the non-significant effects of interpersonal justice on intrinsic motivation. We tested **Hypothesis 3** using structural equation modeling with latent variables in LISREL 8.52 (Jöreskog & Sörbom, 1996), with the results shown in Fig. 2. Note that we allowed the errors between the two reverse-worded task performance items to covary because there was evidence of a wording factor for those two indicators (see Schmitt & Stults, 1985, for a discussion of this common issue for scales that include reverse-worded items). The fit statistics were as follows: χ^2 (202, $N = 152$) = 460.29, $p < .001$; CFI = .93; SRMR = .08, RMSEA = .08, NNFI = .92. This model indicates adequate fit, with the SRMR matching Hu and Bentler (1999) standards and the other indices falling just below those standards. With respect to tests of mediation, LISREL's effect decomposition revealed a significant indirect effect of .10 for procedural justice on task performance through the mechanism of

intrinsic motivation. This significant indirect effect supports mediation (MacKinnon et al., 2002).

We also used structural equation modeling to further examine the causal relationship between justice and intrinsic motivation. Specifically, we compared the hypothesized model with a model that reversed the causal ordering of the justice and intrinsic motivation variables. The fit statistics for the intrinsic motivation to justice model were as follows: χ^2 (203, $N = 152$) = 498.69, $p < .001$; CFI = .92; SRMR = .12, RMSEA = .09, NNFI = .91. As expected, the model specifying paths from intrinsic motivation to justice offered a poorer fit to the data than our hypothesized model.

General discussion

What stands out most from the results of our two studies is the significant relationship between procedural justice and intrinsic motivation. That relationship was supported using a manipulation bounded in Leventhal's (1980) accuracy and consistency rules and using a self-report measure that captured the full spectrum of procedural justice criteria (Colquitt, 2001). The relationship also was supported when referencing motivation to both specific tasks (i.e., anagrams) and multifaceted tasks (i.e., overall job duties). Finally, the relationship was supported using both self-reported and free-choice measures of intrinsic motivation, though the self-reported result was only significant in the laboratory when controlling for the baseline assessment. Despite that qualification, when taken together, these results suggest that fair decision-making procedures stands as one potential means of improving intrinsic motivation among employees.

This study serves as one of the first studies to examine motivation as a consequence of justice (see also Bell et al., 2006; Colquitt & Sakthi, 2002). Such linkages are surprisingly rare given the assumed connection between the justice literature and the larger literature on work motivation (Colquitt & Greenberg, 2003; Cropanzano & Rupp, 2003; Kanfer, 1991; Latham & Pinder, 2005). Our results illustrate the theoretical benefits that arise from continuing to clarify the justice-motivation connection. Specifically, both studies revealed that intrinsic motivation was a partial mediator of the procedural justice-task performance relationship. This relationship has received surprisingly little theoretical attention, especially relative to the attention paid to other beneficial behavioral outcomes in the justice literature, such as OCB, cooperation, rule compliance, and deference to authority (Lind, 2001; Moorman & Byrne, 2005; Tyler & Blader, 2000; Tyler & Lind, 1992). Our results therefore provide a first step in understanding exactly why procedural justice is associated with task performance—because it may foster a type of motivation that has its own unique performance benefits.

Contrary to our expectations, however, interpersonal justice was not related to intrinsic motivation in the two studies, either in a zero-order sense or when considered in conjunction with procedural justice. There is no obvious methodological explanation for these null findings, as the manipulation checks supported the validity of the interpersonal manipulation in Study 1 and the reliability and factor structure information supported the validity of the interpersonal measure in Study 2. The non-significant relationship between interpersonal justice and task performance is perhaps less surprising given that meta-analytic estimates for that relationship are quite low, though those estimates are only based on a handful of studies (Cohen-Charash & Spector, 2001; Colquitt et al., 2001). Subsequent studies have sometimes yielded significant relationships between interpersonal justice and task performance (Aryee, Budhwar, & Chen, 2002; Cropanzano et al., 2002; Rupp & Cropanzano, 2002) and sometimes yielded non-significant relationships (Colquitt et al., 2006; Kickul et al., 2002; Weaver & Conlon, 2003).

Table 3
Descriptive statistics and zero-order correlations for Study 2

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. Procedural justice	3.34	.74	(.85)			
2. Interpersonal justice	4.48	.69	.40*	(.91)		
3. Intrinsic motivation	3.64	.75	.35*	.13	(.80)	
4. Task performance	4.56	.44	.27*	.24*	.28*	(.83)

Note. $n = 152$.

* $p < .05$, two-tailed.

Table 4
Justice and intrinsic motivation for Study 2

Regression step	Intrinsic motivation		
	R^2	ΔR^2	<i>B</i>
1. Procedural justice	.12*	.12*	.36*
Interpersonal justice			-.01

Note. $n = 277$. *B*'s represent unstandardized regression coefficients.

* $p < .05$, two-tailed.

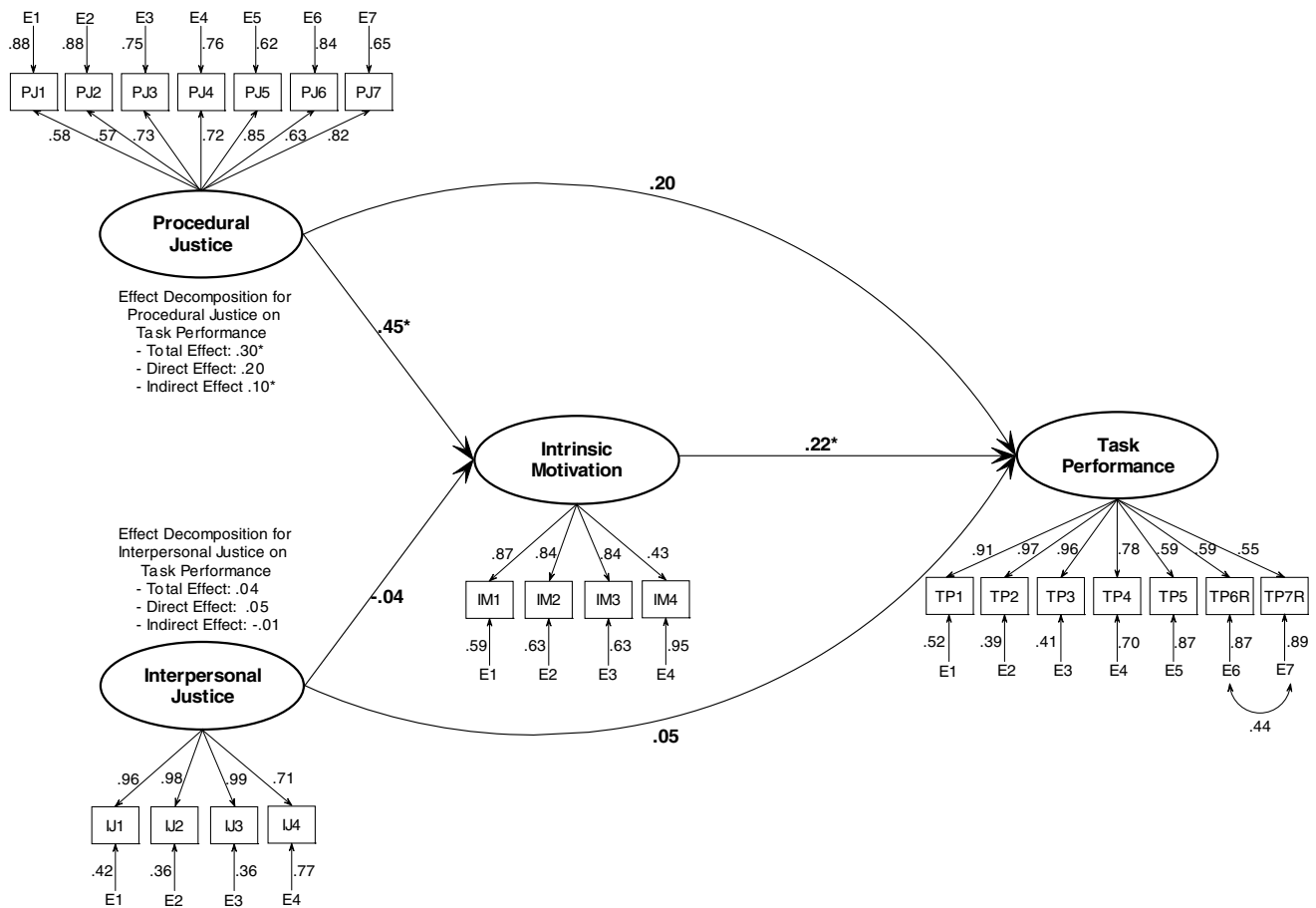


Fig. 2. Mediation analyses for Study 2. Values represent unstandardized path coefficients. $n = 152$. * $p < .05$, one-tailed.

Taken together, that stream of research suggests a smaller effect on task performance than procedural justice has exhibited.³

There are two related and plausible explanations for the non-significant findings for interpersonal justice. Consistent with Schwarz and Clore (1983, 1996), we had reasoned that individuals' affective reactions to just or unjust treatment would serve as information when evaluating task-related stimuli, with positive reactions resulting in more positive appraisals of tasks and negative reactions resulting in more negative appraisals of tasks. It may be that the affect associated with interpersonal justice is more

“psychologically distant” from the task than the affect associated with procedural justice. After all, procedural justice concerns, in part, how task behaviors are evaluated, judged, and translated into outcomes and rewards (e.g., with accuracy, with consistency, without bias). It therefore has a stronger task-based connection than interpersonal justice. Moreover, the discretionary nature of interpersonal justice may increase the likelihood that employees will attribute the behavior to the authority rather than to other contextual factors. Personal attributions may then increase the likelihood that reciprocation will be directed towards the authority (Chiaburu & Harrison, *in press*), rather than towards the task.

Although our hypotheses for interpersonal justice were not supported, it is possible that these hypotheses would be supported for other constructs that share some similarities with interpersonal justice. Recall that interpersonal justice consists of two rules: respect (e.g., being polite rather than rude) and propriety (e.g., refraining from improper remarks or prejudicial statements) (Bies & Moag, 1986; Greenberg, 1993). A construct that is similar to interpersonal injustice is that of abusive supervision, defined as “subordinates’ perceptions of the extent to which supervisors engage in the sustained display of hostile verbal and nonverbal behaviors, excluding physical contact” (Tepper, 2000, p. 178). While interpersonal justice is also conceptualized as a perception, there are differences between these two constructs. First, interpersonal injustice may or may not have elements of hostility, whereas, by definition, abusive supervision must be hostile in nature. In addition, Tepper (2000) conceptualization suggests that abusive supervision is of an enduring nature, whereas interpersonal injustice can occur sporadically because it is bounded in the enactment

³ To examine this issue in more depth, we meta-analyzed 25 articles reporting an empirical relationship between procedural justice or interpersonal justice and task performance. We focused on interpersonal justice in order to maintain a close correspondence with our study. From these 25 articles, we obtained 26 independent samples and computed meta-analytic estimates of the zero-order relationships between the two justice dimensions and task performance, following the guidelines provided by Hunter and Schmidt (2004). Our results demonstrate that procedural justice exhibits a slightly stronger correlation with task performance ($r = .23$, $rc = .27$) than interpersonal justice ($r = .19$, $rc = .22$), though the confidence intervals for the two relationships overlap. In order to examine the unique effects of procedural and interpersonal justice on task performance, we conducted a meta-analytic regression, using the harmonic mean sample size to compute standard errors (Viswesvaran & Ones, 1995). The meta-analytic correlation matrix used as input for the regression consisted of the corrected meta-analytic correlations as well as the corrected meta-analytic correlation between procedural and interpersonal justice ($rc = .58$) computed from the 26 samples we identified. Results of this regression revealed a significant regression coefficient for procedural ($\beta = .22$, $p < .05$) but not interpersonal ($\beta = .10$) justice. These meta-analytic results are similar to the findings of our study and support our original contention that a non-significant relationship between interpersonal justice and task performance is not that surprising and corresponds to the majority of existing research.

of some decision-making procedure. It may be that the increased severity and endurance inherent in abusive supervision would impact intrinsic motivation and performance to a greater degree than interpersonal injustice.

Another relevant construct is that of social undermining, which is typically defined as “behavior intended to hinder, over time, the ability to establish and maintain positive interpersonal relationships, work-related success, and favorable reputation” (Duffy, Ganster, & Pagon, 2002, p. 332). Unlike interpersonal injustice, social undermining requires an intention to harm. The addition of intention to harm might also increase the likelihood of intrinsic motivation and performance effects. Yet another potential antecedent is that of workplace incivility (Andersson & Pearson, 1999), defined as “low-intensity deviant behavior with ambiguous intent to harm the target, in violation of workplace norms for mutual respect. Uncivil behaviors are characteristically rude and discourteous, displaying a lack of regard for others”. It may be that broader nature of workplace incivility is more likely to negatively affect intrinsic motivation and performance.

Although these constructs may be more fruitful to research on intrinsic motivation than interpersonal justice, it is important to note that the referent-based constraints discussed previously are also relevant to abusive supervision, social undermining, and incivility. Therefore, these constructs may not display strong relationships with intrinsic motivation and task performance. As with interpersonal justice, abusive supervision, social undermining, and incivility may be more likely to elicit reactions toward the authority rather than broader reactions or reactions focused on specific tasks. Therefore, it is important that future research continue to examine outcomes directed at the authority, such as supervisor directed citizenship and counterproductive work behaviors. These outcomes were not included in our study because they have already been the focus of much theorizing in the justice literature and are less relevant to intrinsic motivation.

Suggestions for future research

Our results offer a number of avenues for future research. One potential avenue for future research can be gleaned from self-determination theory (Deci & Ryan, 2000). According to self-determination theory, intrinsic motivation is fostered when situational or personal factors satisfy three human needs, many of which are also found in other models: autonomy, competence, and relatedness (for reviews, see Deci & Ryan, 2000; Sheldon, Turban, Brown, Barrick, & Judge, 2003; Vallerand, 1997). Although we propose emotions as the primary mechanism linking justice and intrinsic motivation, it is also possible that justice affects intrinsic motivation through need fulfillment, as justice can fulfill many of the same needs described by self-determination theory. In a narrative review of the literature, Cropanzano, Byrne, Bobocel, and Rupp (2001) introduced the multiple needs model of justice, drawing from theoretical work on ostracism by Williams (1997). The multiple needs model suggests that justice is an important concern for individuals because fair treatment helps to fulfill four fundamental human needs: the need for control, the need for positive self-regard, the need for belonging, and the need for meaning (Cropanzano et al., 2001). The first three of those needs—control, positive self-regard, and belonging—are very similar to the autonomy, competence, and relatedness needs described in self-determination theory (Deci & Ryan, 2000). This similarity suggests that justice could have significant influences on intrinsic motivation, with need fulfillment acting as an additional intervening mechanism.

Future research should also explore other motivational consequences of procedural justice, including non-intrinsic forms. Self-determination theory may be a guide here as well, as justice could influence some of the extrinsic motivation forms described by the

theory (Deci & Ryan, 2000). For example, procedural justice could predict identified motivation. Past research has shown that procedural justice can foster a sense of proactivity, as individuals who experience fair treatment expand their perceptions of their work role, effectively internalizing a greater variety of behaviors (Tepper, Lockhart, & Hoobler, 2001). Procedural justice could also predict external motivation. From the inception of the literature, scholars have argued that procedural justice can influence the instrumentality of rewards by making them appear more predictable and controllable (Lind & Tyler, 1988; Thibaut & Walker, 1975; Thibaut & Walker, 1978). It may therefore be that the motivational benefits of procedural justice come in both intrinsic and extrinsic varieties.

Limitations

These studies have some limitations which should be noted. Study 1 consisted of a laboratory study, which raises concerns about generalizability and external validity. However, it should be noted that the laboratory environment offered two unique advantages. First, the laboratory setting allow for the measurement of behavioral outcomes. In addition, laboratory studies allows for the use of random assignment, eliminating alternative explanations and therefore maximizing internal validity. In contrast, Study 2 consisted of a correlational field study, which raises concerns about internal validity, particularly given that the procedural justice–intrinsic motivation linkage was tested with self-report data from the same source (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Pedhazur and Schmelkin (1991) suggested that causation cannot be inferred without manipulating the independent variable and Stone-Romero and Rosopa (2004) asserted that longitudinal or experimental data is needed to confirm mediation. Thus, although both lab and field studies have unique limitations, we feel that the combination of the two was beneficial to the present research.

Another limitation that should be noted is the use of double-barrelled items for the manipulation check used in Study 1. The use of double-barrelled items necessarily means that we cannot tease apart our procedural justice (consistency vs. accuracy) or interpersonal justice (respect vs. propriety) manipulations. However, the nature of our manipulation checks was meant to match our manipulations. Specifically, procedural justice was manipulated by varying both consistency and accuracy rules while interpersonal justice was manipulated by varying both respect and propriety rules. Therefore, we would expect to obtain similar results using either single or double-barrelled items.

Another potential limitation of our study is the lack of measured underlying mechanisms explaining the relationship between intrinsic motivation and performance, such as increased cognitive flexibility, learning, and recall (for a review, see Deci & Ryan, 2000; Vallerand, 1997). We suggest that future research on intrinsic motivation use a multiple cue probability learning task (MCPL) to capture some of these underlying mechanisms (for a review, see Hollenbeck et al., 1995). MCPL tasks require participants to interpret and combine multiple cues to arrive at some judgment that can be rated on its accuracy. While participants are trained to interpret these cues, it is ultimately up to the participant to make a final decision; therefore decision accuracy can be used as a measure of performance. After each decision, the participant receives feedback on the accuracy of his or her decision. Participants that utilize the feedback to improve decision-making are clearly learning, one of the mechanisms by which intrinsic motivation impacts performance. By using a computer task, the experimenter can make changes to the task context, such as making new cues more important. This method can be used to capture cognitive flexibility. Finally, using computerized MCPL makes it relatively easy to ask participants about task details as a measure of task recall.

Practical implications

Despite these limitations, the results of this study offer a number of practical implications. Traditionally, one of the most common ways of increasing intrinsic motivation is by altering core job characteristics by increasing task and skill variety, task significance, autonomy, and feedback (Hackman & Oldham, 1980). However, changing job characteristics proves more difficult in some jobs than others. This study suggests another means of increasing intrinsic motivation—increasing procedural justice. Our results suggest that managers can affect employees' intrinsic motivation by providing some input into the decision-making process, using accurate information on a consistent basis, and adhering to established ethical standards (Leventhal, 1980; Thibaut & Walker, 1975, 1978). Although treating employees fairly seems commonsensical, managers do not always follow justice guidelines (Folger & Skarlicki, 2001). To increase the likelihood of fair treatment, managers can receive training designed to focus on procedural justice rule adherence (for a review, see Skarlicki & Latham, 2005). Indeed, Skarlicki and Latham (1996) demonstrated that union leaders can be trained successfully on procedural justice principles. In addition to potentially increasing intrinsic motivation, previous research has linked justice training to various important outcomes, including increased citizenship behaviors (Skarlicki & Latham, 1996) and decreased employee strain (Greenberg, 2006).

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