

Justifying Outcomes Versus Processes: Distributive and Procedural Justice Beliefs as Predictors of Positive and Negative Affectivity

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Abstract System justifying beliefs can have adaptive consequences for individuals that include enhanced coping and decreased emotional distress. The present study examined whether individual differences in two kinds of system justifying beliefs uniquely predict dispositional affect. Participants from across the United States were recruited via internet to complete dispositional measures of procedural and distributive justice beliefs, and also brief measures of positive and negative affectivity. While belief in fair outcomes (distributive just world beliefs) was generally associated with greater positive affectivity, belief in fair processes (procedural just world beliefs) was modestly associated with decreased negative affectivity. In addition, positive and negative affectivity were predicted by interactions between procedural and distributive just world beliefs, with each accentuating the general emotional benefit provided by the other. Finally, an interactive effect of procedural just world beliefs and social class was obtained for positive affectivity, with greater positive affectivity occurring for disadvantaged (lower income) individuals who had strong procedural just world beliefs. In general, these results suggest the potential for unique and interactive relationships between particular system justifying beliefs and measures of emotion, especially among members of advantaged versus disadvantaged groups.

Keywords Justice · System justification · Procedural justice · Distributive justice · Just world

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According to System Justification Theory, individuals strive to defend and justify the status quo (e.g., Jost and Banaji 1994; Jost and Hunyady 2002). This rationalization aids in preserving existing social orders such that political, institutional, and economic arrangements are seen as legitimate by members of both advantaged and disadvantaged social classes. System justification theory has been used to explicate numerous and seemingly paradoxical belief systems including working class conservatism, meritocratic ideology, protestant work ethic, social dominance orientation, and many others (for review, Jost and Hunyady 2005). Like many cognitive strategies, system justification suggests a motivation to perceive the world as orderly and controlled, thereby allowing individuals to better interact with social institutions, and also cope with experiences of social and personal injustice.

Theory and research suggest that the consequences of system justification comprise a double-edge sword. On one hand, system justification may be harmful to the extent that status quo beliefs promote preferences for advantaged groups, derogation of disadvantaged groups, and a generally suppressed desire for social change (e.g., Jost and Banaji 1994; Jost et al. 2004). On the other hand, a beneficial consequence may be the capacity of system justification to protect emotional well being. Namely, by enhancing satisfaction with extant social orders, status quo beliefs may increase positive affect and suppress negative affect among members of both advantaged and disadvantaged social classes (e.g., Jost and Hunyady 2005). The present research is focused on these adaptive consequences of system justification. Specifically, the present study suggests that system justifying beliefs may be idiosyncratically and interactively linked to dispositional measures of emotion, and that these relationships may be further explicated by considering the procedural and distributive justice dispositions of both economically advantaged and disadvantaged individuals.

System Justification, Emotional Health, and Social Class

Status quo beliefs are thought to be generally emotionally beneficial (e.g., Jost and Hunyady 2002, 2005). For example, theory and research have demonstrated a general potential of system justification to increase positive affect, self-esteem and subjective well being, and to decrease negative affect and depression (Jost and Hunyady 2005; Jost et al. 2003). These relationships suggest that status quo beliefs serve a palliative function, thus aligning system justification with a rich literature on stress and coping (Folkman and Lazarus 1980). Like many cognitive strategies, system justification may help individuals cope by diminishing primary stress appraisals, by enhancing secondary stress appraisals, or by acting as a particular kind of coping response (for review, Jost and Hunyady 2002).

Intersecting with the potential of system justification to benefit emotional well being is the assertion that status quo ideologies are ubiquitous (Jost and Banaji 1994; Jost et al. 2004). That is, both advantaged and disadvantaged social classes may gain emotional benefits or coping resources from the use of status quo ideologies (e.g., Jost and Hunyady 2005). For example, system justification may be associated with decreased frustration among the disadvantaged, and also diminished guilt among the advantaged (e.g., Wakslak et al. 2007). Interestingly,

disadvantaged social classes can engage the use of system justification despite that this often connotes paradoxical support for systems and beliefs that do not serve their outward self interests. System justification has thus been used to explicate seemingly contradictory support among the disadvantaged for advantaged outgroups, and also the use of stereotypes by disadvantaged individuals to rationalize their own inferior positions (for reviews see Jost and Banaji 1994; Jost and Hunyady 2002).

Although system justification may be emotionally beneficial, an unresolved empirical question concerns whether affective benefits are idiosyncratically linked to particular kinds of status quo beliefs. Specifically, it is not yet known whether the numerous ideologies that fall under the umbrella of system justification are associated with regulation of positive and negative affect in unique or interactive ways. A related empirical question is whether advantaged and disadvantaged individuals will endorse similar kinds of system justifying beliefs to regulate affect. In other words, researchers have not yet established whether links between status quo beliefs and measures of both positive and negative emotion are consistent across social class.

Although theory and research have emphasized that needs to regulate affect are universal (e.g., Campos et al. 1989), there are also reasons to suspect that the palliative function of system justification may operate differently across social class. In particular, positive and negative affect may stem from different origins depending on social class. For example, whereas guilt may serve as a primary source of negative affect for members of relatively advantaged social classes, frustration and anger may comprise dominant sources of negative affect among members of more disadvantaged groups. As such, social class may dictate a need to utilize different kinds of system justifying beliefs to maintain healthy emotional states.

Justice Beliefs as System Justification

One way that system justifying ideologies might uniquely relate to emotional health is through differential links to beliefs about justice. Justice beliefs are historically implicated in system justification theory through belief in a just world (e.g., Jost and Burgess 2000; Jost and Hunyady 2002). Specifically, believing that individuals ‘get what they deserve’ and ‘deserve what they get’ provides a ready method of endorsing the status quo (Lerner 1980). Moreover, just world theory and research have suggested that perceiving a just social order may support not only the continued pursuit of self interest among the advantaged, but also internalization of inferiority among the disadvantaged (e.g., Jost and Hunyady 2002 for review; Tyler and McGraw 1986). Finally, theory and research on just world beliefs have emphasized cognitive strategies that can reinforce the legitimacy of inequitable circumstances, and these especially include derogation of the disadvantaged (Hafer and Bègue 2005 for recent review). Of primary relevance to the present research, just world beliefs comprise a coping strategy that is similar to those generally proffered by system justification. In particular, just world beliefs may be utilized to help individuals cope with or adapt to inequitable circumstances, especially including experiences of social and personal inequity (Dalbert 1997). Also similar to system

justification, just world beliefs operate by altering primary and secondary stress appraisals, and by providing a general coping strategy for response to various stressors (for review Dalbert 2001).

Although just world beliefs are often discussed within the context of system justification, an important distinction that is not well translated concerns distributive and procedural justice. Distributive justice involves evaluations of the fairness of outcomes, allocations or distribution of resources (Adams 1965; Walster et al. 1978), while procedural justice concerns evaluations of the fairness of decision processes, rules, or interpersonal treatment (Thibaut and Walker 1975; Lind and Tyler 1988). A vast literature supports that individuals make unique judgments about the fairness of outcomes versus procedures, and that both types of judgments can predict behaviors, decisions, or evaluations in important ways (for review see Tyler and Smith 1998). Recent research also suggests that beliefs about procedural and distributive justice encompass not only contextual assessments of fairness, but also stable dispositional tendencies to perceive outcomes versus rules and processes as uniquely deserved (Lucas et al. 2007).

Of present interest, incorporating procedural and distributive justice into system justification theory suggests that these beliefs may comprise distinct kinds of status quo ideologies. Moreover, endorsing either outcomes or processes as deserved may serve unique palliative functions, thus suggesting that fairness beliefs may be idiosyncratically linked to positive and negative emotion. Curiously however, possible differential associations with emotion have been scarcely studied in system justification literature, and links to dispositional procedural and distributive just world beliefs in particular have not been empirically examined. As such, it is not yet known if these specific dispositional tendencies towards system justification are associated with emotion in distinct ways.

At least three distinct kinds of links between justice beliefs and emotion are suggested in the literature. First, possible *justice main effects* are suggested, in which distributive and procedural just world beliefs are generally differentially associated with positive and negative affectivity. Second, a possible *justice interactive effect* is suggested, in which procedural and distributive justice are conjointly associated with positive and negative affectivity. Finally, a *justice multigroup effect* is suggested in which justice beliefs are differentially associated with affect depending on social class or group membership.

Justice Main Effects

Justice main effects suggest that distributive and procedural just world beliefs may be generally differentially linked to positive and negative affectivity (i.e., unique main effects). One specific but untested individual difference hypothesis is that distributive just world beliefs may be generally associated with high positive affectivity, while procedural just world beliefs may be generally associated with reduced negative affectivity. The potential for a link between positive emotion and distributive justice is suggested in part by research on discrete emotions that has shown happiness and pride (i.e., high positive affect) are especially associated with receiving favorable outcomes (e.g., Weiss et al. 1999). Moreover, a general link

between procedural justice and negative emotion is somewhat supported by initial research that has suggested anger and frustration (i.e., high negative affect) especially require individuals to consider procedural justice violations (De Cremer (2006). Discrete emotions and procedural fairness effects on self-esteem: The role of certainty versus uncertainty-related emotions, the Netherlands: Unpublished manuscript, Tilburg University; Vermunt et al. 1996).

Why might distributive just world beliefs be more strongly associated with positive affectivity and procedural justice more strongly associated with negative affectivity? One proffered explanation involves their unique primary and secondary appraisal functions. Specifically, Weiss et al. (1999) have suggested that justice beliefs mimic a two-stage stress appraisal process in which individuals first ascertain whether an event has relevance to personal well being (i.e., primary appraisal), and then assign interpretive meaning after scrutiny of the event context (i.e., secondary appraisal). Whereas decision outcomes provide information that is needed for the initial evaluation of relevance (i.e., primary appraisal), procedural considerations provide information that is necessary for generating an ultimate interpretation (i.e., secondary appraisal). Importantly, positive and negative emotions also have been differentially linked to primary and secondary appraisals. Specifically, positive emotions such as happiness have been shown to only require primary appraisals, while negative emotions such as anger or guilt require that individuals also consider context features such as intentionality and agency (e.g., Weiner 1985).

Additional theoretical support for links between procedural fairness and negative affectivity may be derived from the capacity of fair processes to communicate information to individuals about social worth (Lind and Tyler 1988). Considerable research has suggested that procedural justice can serve a social identity function by providing individuals with an opportunity to reflect on their social worth via the treatment that they are accorded by others (for review, Tyler and Smith 1998). That is, individuals receive fair and respectful treatment when they are socially valued. Contemporary theories of justice have emphasized that the social evaluative function of fair processes is a driving force behind their often considerable importance (e.g. Greenberg 1990; Tyler 1994; Tyler and Blader 2003). Importantly, unfair treatment may be synonymous with exclusion, and social ostracism has been especially strongly linked to negative emotions including anger and sadness (e.g., Chow et al. 2008). Thus, procedural justice also may be theoretically linked to negative affectivity via associations with social exclusion.

Justice Interactive Effect

A second possible link between procedural and distributive justice and affectivity encompasses a *justice interactive effect*. That is, procedural and distributive justice may work conjointly to enhance positive affectivity and to reduce negative affectivity. Considerable research has suggested that justice beliefs often work interactively, and there are numerous and well recognized examples of such effects (for review, Tyler and Smith 1998). Perhaps most well known are demonstrations of fair process effects. Specifically, believing that an unfair or unfavorable outcome was

at least arrived at by means of a fair process may reduce subsequent negative evaluations associated with it (e.g., Folger et al. 1979; Van den Bos 2005). Importantly, interactive effects of procedural and distributive justice have been shown to uniquely impact general emotional distress and well being (Tepper 2001) and also discrete emotions (Weiss et al. 1999). For example, Tepper (2001) demonstrated that the interaction of distributive and procedural justice accounted for significant and unique variance in employee ratings of psychological distress, with the strongest negative effects of low procedural justice occurring when distributive justice also was low.

Interactive effects of procedural and distributive justice are also evident in stress and coping literature, where it is similarly suggested that procedural justice can serve a stress reducing function when outcomes are seen as unfair (for review, Vermunt and Steensma 2005). More generally, research has suggested a ‘buffering’ effect of procedural justice, whereby negative consequences of inferior outcomes are less harsh when accompanied by the use of fair processes. However, current research does not yet encompass interactions between dispositional tendencies to perceive procedural and distributive justice as deserved. Moreover, current research has been predominantly focused on whether such interactions can alleviate the emotional consequences of perceived unfair outcomes, and not necessarily whether they enhance the benefits of perceived fair or favorable outcomes.

Justice Multigroup Effect

A final and important possibility that is especially highlighted by system justification theory is that links between justice beliefs and affectivity may depend on social class. Namely, members of advantaged and disadvantaged social classes may rely differently on justice beliefs to help regulate emotion. One specific hypothesis concerns the possible differential importance of procedural justice across social class. To the extent that disadvantaged individuals can be assumed to more often receive inferior outcomes, perceiving the use of fair processes might be especially important to their maintaining emotional well being. In parallel, since advantaged groups presumably receive superior or favored outcomes, belief in fair processes might not be as strongly needed. Thus, the capacity of system justification to enhance positive and reduce negative affect might be especially linked to the procedural just world beliefs of disadvantaged individuals.

A social identity function of procedural justice also might be implicated in a multigroup justice effect, as disadvantaged individuals need reassurance that they remain socially valued in spite of their inferior outcomes (Lind and Tyler 1988). Examining the potential of social class to moderate relationships between justice beliefs and emotion is timely in light of a paucity of evidence for differential effects of procedural justice on measures of emotion (for review, Bembenek et al. 2007). Moreover, although system justification has suggested that emotional benefits may result for both advantaged and disadvantaged groups, little research has examined whether the same status quo beliefs will be used by members of both social classes.

The Present Study

With an eye towards emotional benefits suggested by justice theory and also system justification theory, the present research sought to determine whether dispositional justice beliefs link to measures of affect in both unique and interactive ways. Positive and negative affectivity were measured in combination with dispositional beliefs about procedural and distributive justice. A general hypothesis of this research was that procedural and distributive just world beliefs would intersect with positive and negative affectivity in unique ways. Specifically, it was expected that a dispositional tendency to perceive outcomes as fair would be associated with increased positive affectivity, while a dispositional tendency to perceive fair processes would be associated with decreased negative affectivity (i.e., justice main effects). In addition, it was expected that procedural and distributive just world beliefs would interactively predict positive and negative affectivity, with procedural justice enhancing the emotional benefits associated with belief in fair outcomes (i.e., justice interactive effect). Finally, it was hypothesized that links between procedural just world beliefs and affectivity would depend on participants' income—a readily available proxy for membership in an advantaged versus disadvantaged social class (i.e., justice multigroup effect). Since disadvantaged individuals receive generally inferior outcomes, and therefore have a particular emotional incentive to justify status quo processes as fair, it was hypothesized that procedural just world beliefs would be more strongly associated with measures of emotion in low income participants.

Method

Participants and Procedure

206 participants (105 male) were recruited from across the United States by Survey Sampling International—an internet research sample provider. Prior to their involvement in the present research, email invitations were sent to all participants, with the goal to recruit as broad a range of socioeconomic categories as possible. Participants indicated their household income by responding to a single survey item with nine response categories. The lowest income category specified a household income of less than \$20,000 USD annually, while the highest specified greater than \$150,000 USD. The median reported household income of the recruited sample was \$40,000–\$49,000 USD. Eight-seven participants (42.2%) reported less than \$40,000 USD annual household income. Similarly, 87 participants reported greater than \$49,000 annual household income. Participant ages for the entire sample ranged from 19 to 85 years ($M=48.11$, $SD=14.68$). In addition, 181 participants were Caucasian (83.4%), with no other ethnic group substantially present.

All participants completed an online survey entitled 'Perceptions of Daily Living.' This survey was designed to be completed in ten minutes or less, and was administered in tandem with several additional but unrelated surveys as a subset of unique measures. Participants were anonymous, and all responses were recorded electronically. Upon completion of the survey, participants were entered into a prize lottery to receive a small amount of compensation for their time.

Measures

The following measures of justice beliefs and dispositional affect were administered. The order of presentation of these two sets of measures was randomized prior to their administration.

Procedural and Distributive Just World Beliefs (Lucas et al. 2007) All participants completed an eight-item multidimensional measure of procedural and distributive just world beliefs. This newly available measure is similar to other well known measures in conceptualizing individuals' general dispositional attitudes about justice (e.g., Dalbert et al. 1987). In addition, this measure has been shown to positively correlate with established justice measures (Lucas et al. 2007). However, the selected measure is unique in formally assessing individual differences in both procedural and distributive just world beliefs. Procedural just world beliefs encompass the deservedness of rules, processes and treatment (e.g., 'people are generally subjected to processes that are fair') whereas distributive just world beliefs encompass beliefs about the deservedness of outcomes or allocations (e.g., 'people usually receive outcomes that they deserve'). Procedural and distributive just world beliefs are each measured using four items that are rated on a Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Two separate scores are calculated by summing the four appropriate items, such that a maximum score of 28 is possible for each measure. Table 1 presents item-level descriptive statistics for both subscales. Prior research has validated the factor structure, internal consistency, and discriminant validity of these measures (Lucas et al. 2007; Lucas and Goold 2008). In the present study, both procedural just world ($\alpha=.94$) and distributive just world ($\alpha=.90$) measures were internally consistent. Similar to prior research, procedural and distributive just world beliefs were moderately correlated with one

Table 1 Item statistics for procedural and distributive just world scales ($N=206$)

	Mean (SD)	Item-total correlation
Distributive just world beliefs ($\alpha=.90$):		
1. I feel that people generally earn the rewards and punishments that they get in this world.	4.65 (1.62)	.72
2. People usually receive the outcomes that they deserve.	4.32 (1.55)	.80
3. People generally deserve the things that they are accorded.	4.22 (1.39)	.76
4. I feel that people usually receive the outcomes that they are due.	4.18 (1.49)	.82
Procedural just world beliefs ($\alpha=.94$):		
1. People usually use fair procedures in dealing with others.	3.97 (1.46)	.83
2. I feel that people generally use methods that are fair in their evaluations of others.	3.89 (1.45)	.87
3. Regardless of the outcomes they receive, people are generally subjected to fair procedures.	3.94 (1.44)	.85
4. People are generally subjected to processes that are fair.	4.05 (1.47)	.91

another ($r=.57, p<.001$). Income was not overall associated with either procedural just world beliefs ($r=.03, p=.69$) or distributive just world beliefs ($r=-.01, p=.95$).

Positive and Negative Affects Scale (Watson et al. 1988) Dispositional tendencies towards experiencing positive and negative affect were measured using the Positive and Negative Affect Scale (PANAS). The PANAS consists of ten positive affect and ten negative affect adjectives. Participants are asked to rate the extent to which they experience each of these twenty emotions. In the present study, participants completed this measure by indicating the extent to which they generally experience each feeling. All items are completed using a Likert-type scale ranging from 1 (*very slightly*) to 5 (*extremely*), and separate scores are calculated for positive and negative affect by summing together appropriate items. In the present study both positive ($\alpha=.90$) and negative affectivity ($\alpha=.93$) measures were internally consistent.

Data Analysis

Relationships between justice beliefs, income and both positive and negative affectivity were examined using hierarchical multiple regression. Scores on the procedural just world beliefs ($M=15.85, SD=5.39$) and distributive just world beliefs ($M=17.36, SD=5.29$) measures were centered about their mean, and three two-way interaction terms were created by multiplying all combinations of the income variable and the two justice beliefs scores. Although it was not hypothesized, a three-way interaction term was also calculated and considered to rule out the possibility that expected two-way interactions would be further qualified.

Simultaneous entry was used for all multiple regressions, with positive and negative affectivity serving as criterion variables. Procedural just world beliefs, distributive just world beliefs, and income were entered into the first step of each hierarchical regression, and the main effect of each was assessed using r-square and the individual regression weights. Two-way interaction terms were added at the second step of each regression and assessed using r-square change and individual regression weights. The three-way interaction was considered at the third step of each regression and assessed in similar fashion. To interpret significant two-way interactions, simple slope analyses were performed using a traditional multiple regression approach (Aiken and West 1991). In addition, interactions were plotted using predicted values that were obtained from separately calculated regression lines.

Results

Positive Affectivity

Table 2 presents multiple regression results for positive affectivity. The main effect of distributive just world beliefs was significant at the first step of this regression. Distributive just world beliefs were associated with greater positive affectivity ($\beta=.07, p<.001$). Procedural just world beliefs ($\beta=.07, p=.35$) and income ($\beta=.07,$

Table 2 Procedural and distributive just world beliefs predicting positive and negative affectivity ($N=206$)

	Positive affectivity	Negative affectivity
Step 1 Δr^2	.11***	.03#
PJB	.07	-.12#
DJB	.27***	-.03
Income	.07	-.10#
Step 2 Δr^2	.05**	.03#
PJB x Income	-.32***	.09
DJB x Income	.04	-.21
PJB x DJB	.17**	-.16*
Step 3 Δr^2	.01	.01
PJB x DJB x Income	-.18	.20

PJB procedural just world beliefs, *DJB* distributive just world beliefs

* $p < .05$, ** $p < .01$, *** $p < .001$, # $p < .10$

$p = .31$) were not independently associated with positive affectivity. The main effect of distributive just world beliefs was qualified by a significant two-way interaction with procedural just world beliefs at the second step of the regression ($\beta = .17$, $p < .01$). In addition, a significant procedural just world x income interaction emerged ($\beta = -.32$, $p < .05$).

To probe the significant procedural x distributive interaction, procedural just world beliefs were regressed separately onto positive affectivity for individuals who were either high or low (± 1 SD) in distributive just world beliefs. For low distributive justice, there was no association between procedural just world beliefs and positive affectivity ($\beta = .01$, $p = .95$). For high distributive justice, the positive relationship between procedural just world beliefs and positive affectivity was considerably stronger ($\beta = .14$, $p = .16$). Thus, procedural just world beliefs were unrelated to positive affectivity when distributive just world beliefs were low, but they more substantially enhanced positive affectivity when belief in fair outcomes was high. To further display this interaction, predicted positive affectivity scores were plotted for low and high distributive justice individuals who were either low (25th percentile), moderate (50th percentile) or high (75th percentile) in procedural just world beliefs. As seen in Fig. 1, procedural just world beliefs did not moderate the effect of low distributive just world beliefs on positive affectivity. However, the effect of high distributive just world beliefs depended on procedural just world beliefs, with the highest levels of positive affectivity occurring for individuals who were high in both procedural and distributive just world beliefs.

To probe the significant procedural justice x income interaction, separate regressions also were calculated for individuals who were low income (less than \$40,000) versus high income (more than \$75,000). For low income individuals, belief in fair processes was associated with greater positive affectivity ($\beta = .37$, $p < .001$). For high income individuals, belief in fair processes was not associated with positive affectivity ($\beta = .11$, $p = .50$). Predicted positive affectivity scores were

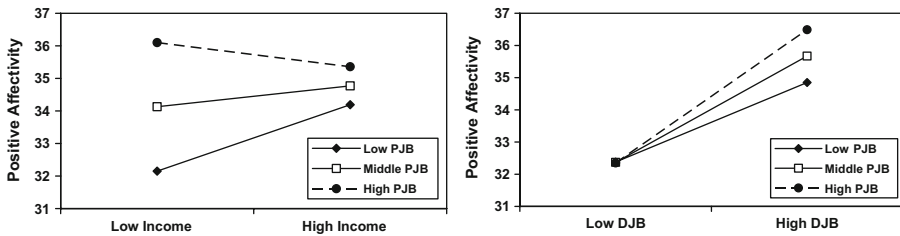


Fig. 1 Predicted positive affectivity means from procedural just world beliefs x income (*left*) and procedural just world beliefs x distributive justice (*right*) interactions

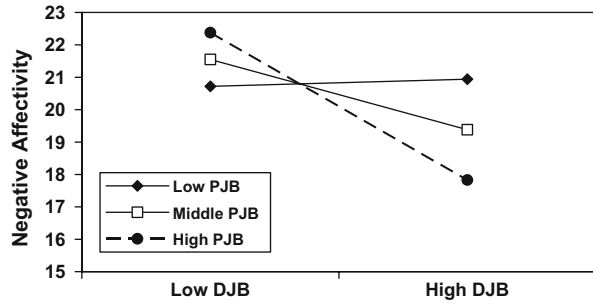
similarly plotted for low and high income individuals who were low, moderate, or high in procedural just world beliefs. As seen in Fig. 1, the importance of procedural just world beliefs was diminished when income was high. However, procedural just world beliefs substantially moderated the effect of income on positive affectivity when income was low. In general, positive affectivity was highest for low income individuals who believed in fair processes and lowest for low income individuals who did not.

Negative Affectivity

Table 2 also presents multiple regression results obtained for negative affectivity. The main effect of procedural just world beliefs on negative affectivity approached significance ($\beta = -.13$, $p = .11$), and provided some evidence that belief in fair processes may be generally associated with reduced negative affectivity. The main effect of income also approached significance ($\beta = -.11$, $p = .13$) and suggested that greater income was generally associated with less negative affectivity. Distributive just world beliefs were not associated with negative affectivity ($\beta = -.03$, $p = .62$).

The main effect of procedural just world beliefs was qualified by a significant procedural x distributive two-way interaction in the second step ($\beta = -.16$, $p < .05$). To probe this interaction, procedural just world beliefs were regressed separately onto negative affectivity for individuals who were high versus low (± 1 SD) in distributive just world beliefs. For low distributive justice there was a weak and positive association between procedural just world beliefs and negative affectivity ($\beta = .10$, $p = .31$), while for high distributive justice there was a significant negative association between procedural just world beliefs and negative affectivity ($\beta = -.25$, $p < .01$). Thus, procedural just world beliefs were unrelated to negative affectivity when belief in fair outcomes was low but were associated with reduced negative affectivity when belief in fair outcomes was high. To further display this interaction, predicted negative affectivity scores were plotted for low and high distributive justice individuals who were low, moderate, or high in procedural just world beliefs. As seen in Fig. 2, negative affectivity was highest for individuals who were low in distributive just world beliefs but high in procedural just world beliefs. Alternatively, negative affectivity was lowest for individuals who were high in both procedural and distributive just world beliefs.

Fig. 2 Predicted negative affectivity means from procedural just world beliefs x distributive justice beliefs interaction



Discussion

In this study, a dispositional tendency to perceive fair outcomes was associated with greater positive affectivity, while a dispositional tendency to perceive fair processes was somewhat associated with reduced negative affectivity (i.e., justice main effects). In addition, these overall divergent relationships were qualified by interactions between procedural and distributive just world beliefs, with each accentuating the general emotional benefit provided by the other (i.e., justice interactive effects). Finally, the effect of procedural just world beliefs on positive affectivity was moderated by social class, with high procedural just world beliefs most substantially associated with the positive affectivity of lower income individuals (i.e., justice multigroup effect). These results suggest that procedural and distributive justice may be incorporated into theory and research on justice beliefs, system justification, and emotion in new and interesting ways.

First, this study demonstrates that distributive and procedural justice may be idiosyncratically linked to positive and negative affectivity. Divergent links to discrete emotions are evident in only a handful of existing studies (for review, De Cremer and Van den Bos 2007). Moreover, no known study has demonstrated the capacity of dispositionally measured distributive and procedural just world beliefs to dissociatively predict positive and negative affectivity. In general, differential associations with positive and negative emotion may be explained in terms of primary and secondary appraisal functions, with primary or initial appraisal reflecting concern for both distributive fairness and positive emotion, and secondary appraisal reflecting both procedural fairness and negative emotion (e.g., Weiss et al. 1999). Links between procedural just world beliefs and negative affectivity are also theoretically supported by research suggesting that social exclusion may result in anger, sadness, and other negative emotions (Chow et al. 2008).

Interestingly, the social identity function of procedural justice also may explain the potentially curious result of a marginally significant main effect of procedural justice. Prior research on justice and emotion has suggested that emotional consequences of procedural justice require that individuals initially and invariably consider outcomes, thus rendering procedural justice incapable of a singular main effect on emotion. Whether the social identity function of procedural justice is ultimately responsible for a possible stand-alone link to negative affectivity remains a question for future empirical study, especially given the lack of a quantitative measure of social identity in this study. Moreover, the association between

procedural just world beliefs and negative affectivity was only marginal, and thus the present study may also be interpreted as supporting that consideration of outcome fairness is indeed required.

A second contribution of this research comes from demonstrating that distributive and procedural just world beliefs work interactively to affect both positive and negative emotion. Prior research has again suggested that negative emotions, especially including anger and guilt, may be predicted by unique combinations of distributive and procedural justice (e.g., Weiss et al. 1999). However, this research has not generally emphasized that such combinations also may be reflected in the unique dispositional tendencies of individuals. Moreover, the present research provides clear evidence that procedural and distributive just world beliefs may work interactively to also affect positive emotion, and this relationship has been only modestly evident in prior research.

For both positive and negative emotion, the effect of procedural just world beliefs can be interpreted as accentuating an emotional benefit provided by strong distributive just world beliefs. Curiously however, there was no substantial benefit (and perhaps even mild detriment) associated with strong procedural just world beliefs when distributive just world beliefs were weak. Thus, procedural just world beliefs did not attenuate the harmful emotional consequences associated with unfair or unfavorable outcomes, but rather accentuated the emotional benefits associated with fair or favorable outcomes. This interpretation somewhat diverges from explanations that have focused on the capacity of fair processes to particularly buffer against receipt of negative or unfair outcomes (e.g., Vermunt and Steensma 2005). The lack of a notable buffering effect in this study is perhaps due to a focus on individual differences in justice beliefs rather than situational assessments of fairness, where protective effects of procedural justice are often observed (e.g., Tepper 2001). Moreover, it is possible that buffering effects will be more evident in cognitive or behavioral outcome measures than in affective assessments. Nevertheless, the capacity of procedural justice to enhance fair outcomes rather than buffer against unfair outcomes is a possibly unique finding that future research on emotions may continue to explore.

A third specific contribution of the present research concerns the potential for social class to moderate links between justice beliefs and emotion. Specifically, positive affectivity was greatest among low income individuals when procedural just world beliefs were strongest. This novel finding is especially important in suggesting that links between justice beliefs and emotion may depend on social class. This finding can inform theory and research on system justification, where use of status quo ideologies to preserve emotional health has been explicitly suggested, but possible use of differential ideologies based on social class is not yet empirically supported. That procedural just world beliefs would be uniquely relevant to the emotional health of disadvantaged (i.e., low income) individuals is sensible considering that they presumably receive generally inferior outcomes. Correspondingly, use of fair processes to enhance positive affectivity among advantaged individuals may not be as necessary, especially in light of positive affectivity that is presumably and parsimoniously associated with superior outcomes.

Although the observed interaction of procedural justice and income on positive affectivity is compelling, it is somewhat curious that a similar effect was not

observed for negative affectivity. One possible explanation is that justice beliefs may be more generally relevant to enhancing positive affectivity than to reducing negative affectivity, where other kinds of system justifying beliefs may be employed (e.g., working class conservatism). It is also possible that an analogous negative affectivity effect was simply statistically underpowered in the present study, or that it was subsumed by a more encompassing interaction of procedural and distributive just world beliefs. Nevertheless, a potential for unique links to affectivity based on social class is timely in light of growing interest in the use of system justification to regulate emotion.

A final and more general contribution of the present research concerns a burgeoning literature on potential health consequences of perceived fairness. Thus far, researchers have suggested many potential health enhancing effects of perceived justice. Some of these links include an enhanced sense of life satisfaction and positive mood (e.g., Bulman and Wortman 1977; Dzuka and Dalbert 2002; Feather 1991; Lipkus et al. 1996), decreased anxiety, depression, and general psychological distress (e.g., Lucas et al. 2008; Otto et al. 2006; Ritter et al. 1990; Sutton and Douglas 2005), and also more adaptive stress reactivity and coping (e.g., Dalbert 2001; Tomaka and Blascovich 1994; Vermunt and Steensma 2003). Justice beliefs also have been linked to physical health through associations with health behavior (Lucas et al. 2008) and cardiovascular illnesses (e.g., De Vogli et al. 2007; Kivimäki et al. 2005). Yet, and despite mounting evidence that perceived fairness is important to health and well being, justice researchers have only recently begun to focus their explorations on links with specific kinds of justice perceptions (for additional examples see Lucas et al. 2008; Sutton and Douglas 2005). Thus, the present research is informative in suggesting that the procedural and distributive justice distinction may be useful in future attempts to link particular components of psychological justice to health.

Limitations

Several limitations mandate a cautious interpretation of results. First, this research was conducted using a convenience sample of internet participants—a procedure that carries inherent limitations and that prevents the generalizability of these results to some groups of individuals. In addition, these data are cross sectional, which impedes the ability to determine the nature of causal relationships between justice beliefs and measures of affectivity. Although this study suggests one viable model for relationships between justice beliefs and affect, and this model is supported a literature suggesting beliefs about justice can precede emotional states (e.g., Bembenek et al. 2007; Jost and Hunyady 2005; Weiss et al. 1999), other models are still possible. Third, some of the present findings are best considered preliminary and should be interpreted only to suggest directions for additional inquiry. Specifically, the overall main effect of procedural just world beliefs on reduced negative affectivity was only marginal. Although this may be explained by a relatively small sample size, theory has also suggested that procedural justice effects may be generally qualified by outcome considerations (e.g., Weiss et al. 1999). Thus, there exists a need to replicate this effect in future studies.

A final limitation concerns the operational definition for advantaged versus disadvantaged groups. While household income comprises a widely utilized criterion for membership in an advantaged or disadvantaged segment of society, there are other possible and commonly used criteria such as race, age, and sexual orientation (e.g., Nosek et al. 2002). Unfortunately, the composition of the present sample did not provide a viable opportunity to examine the nature of relationships between justice beliefs and affect according to these alternative possibilities. Thus, future research should also replicate the present results using alternate sub-types of advantaged and disadvantaged groups, perhaps also including experimentally induced manipulations of social status.

Conclusion

Although use of distinct procedural and distributive justice evaluations is ubiquitous in other areas of justice theory and research, they are not independently emphasized within the context of system justification theory. The present research addresses this gap by demonstrating that beliefs about fair outcomes and processes can comprise unique methods of system justification, with each serving a unique palliative function. In addition, relationships between dispositional justice beliefs and emotion also may be differentially linked to social class, where alternate routes to system justification may be needed. The capacity of dispositional distributive and procedural just world beliefs to both independently and interactively predict positive and negative emotion underscores their unique links to primary and secondary appraisal processes. However, the use of procedural justice to maintain emotional health, especially among disadvantaged individuals, also suggests a possible social identity function that can provide direction for future empirical investigations.

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References

- Adams, J. S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology*. New York: Academic.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks: Sage.
- Bembenek, A. F., Beike, D. R., & Schroeder, D. A. (2007). Justice violations, emotional reactions, and justice-seeking responses. In D. De Cremer (Ed.), *Advances in the psychology of justice and affect* (pp. 13–33). Greenwich: Information Age.
- Bulman, R. J., & Wortman, C. B. (1977). Attributions of blame and coping in the “real world”: severe accident victims react to their lot. *Journal of Personality and Social Psychology*, *35*, 351–363.
- Campos, J. J., Campos, R. G., & Barrett, K. C. (1989). Emergent themes in the study of emotional development and emotion regulation. *Developmental Psychology*, *25*, 394–402.
- Chow, R. M., Tiedens, L. Z., & Govan, C. (2008). Excluded emotions: The role of anger in responses to social ostracism. *Journal of Experimental Social Psychology*, *44*, 896–903.

- Dalbert, C. (1997). Coping with an unjust fate: the case of structural unemployment. *Social Justice Research, 10*(175), 189.
- Dalbert, C. (2001). *The justice motive as a personal resource: Dealing with challenges and critical life events*. New York: Kluwer Academic/Plenum.
- Dalbert, C., Montada, L., & Schmitt, M. (1987). Glaube an die gerechte Welt als Motiv: Validierung Zweier Skalen. *Psychologische Beiträge, 29*, 596–615.
- De Cremer, D., & Van den Bos, K. (2007). Justice and feeling: towards a new era in justice research. *Social Justice Research, 20*, 1–9.
- De Vogli, R., Ferrie, J. E., Chandola, T., Kivimäki, M., & Marmot, M. G. (2007). Unfairness and health: evidence from the Whitehall II study. *Journal of Epidemiology & Community Health, 61*, 513–518.
- Dzuka, J., & Dalbert, C. (2002). Mental health and personality of Slovak unemployed adolescents: the impact of belief in a just world. *Journal of Applied Social Psychology, 32*, 732–757.
- Feather, N. T. (1991). Human values, global self-esteem, and belief in a just world. *Journal of Personality, 59*, 83–107.
- Folger, R., Rosenfield, D., Grove, J., & Corkran, L. (1979). Effects of “voice” and peer opinions on responses to inequity. *Journal of Personality and Social Psychology, 30*(7), 2253–2261.
- Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle aged community sample. *Journal of Health and Social Behavior, 21*, 219–239.
- Greenberg, J. (1990). Organizational justice: yesterday, today, and tomorrow. *Journal of Management, 16*, 399–432.
- Hafer, C. L., & Bègue, L. (2005). Experimental research on just-world theory: problems, developments, and future challenges. *Psychological Bulletin, 131*, 128–67.
- Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system justification and the production of false consciousness. *British Journal of Social Psychology, 33*, 1–27.
- Jost, J. T., & Burgess, D. (2000). Attitudinal ambivalence and the conflict between group and system justification motives in low status groups. *Personality and Social Psychology Bulletin, 26*, 293–305.
- Jost, J. T., & Hunyady, O. (2002). The psychology of system justification and the palliative function of ideology. *European Review of Social Psychology, 13*, 111–153.
- Jost, J. T., & Hunyady, O. (2005). Antecedents and consequences of system-justifying ideologies. *Current Directions in Psychological Science, 14*, 260–265.
- Jost, J. T., Pelham, B. W., Sheldon, O., & Sullivan, B. (2003). Social inequality and the reduction of ideological dissonance on behalf of the system: evidence of enhanced system justification among the disadvantaged. *European Journal of Social Psychology, 32*, 1–24.
- Jost, J. T., Banaji, M. R., & Nosek, B. A. (2004). A decade of system justification theory: accumulated evidence of conscious and unconscious bolstering of the status quo. *Political Psychology, 25*, 881–919.
- Kivimäki, M., Ferrie, J. E., Brunner, E., Head, J., Shipley, M. J., Vahtera, J., et al. (2005). Justice at work and reduced risk of coronary heart disease among employees. *Archives of Internal Medicine, 165*, 2245–2251.
- Lerner, M. J. (1980). *The belief in a just world: A fundamental delusion*. New York: Plenum.
- Lind, E. A., & Tyler, T. R. (1988). *The social psychology of procedural justice*. New York: Plenum.
- Lipkus, I. M., Dalbert, C., & Siegler, I. C. (1996). The importance of distinguishing the belief in a just world for self versus others. *Personality and Social Psychology Bulletin, 22*, 666–677.
- Lucas, T., & Goold, S. (2008). The malleability of belief in a just word: evidence from a health resource allocation exercise. *Psychology Journal, 5*, 92–104.
- Lucas, T., Alexander, S., Firestone, I. J., & LeBreton, J. M. (2007). Development and initial validation of a procedural and distributive just world measure. *Personality and Individual Differences, 43*, 71–82.
- Lucas, T., Alexander, S., Firestone, I. J., & LeBreton, J. M. (2008). Just world beliefs, perceived stress, and health behavior: the impact of a procedurally just world. *Psychology & Health, 23*, 849–866.
- Nosek, B. A., Banaji, M. R., & Greenwald, A. G. (2002). Harvesting implicit group attitudes and beliefs from a demonstration website. *Group Dynamics, 6*, 101–115.
- Otto, K., Boos, A., Dalbert, C., Schöps, D., & Hoyer, J. (2006). Posttraumatic symptoms, depression, and anxiety of flood victims: the impact of the belief in a just world. *Personality and Individual Differences, 40*, 1075–1084.
- Ritter, C., Benson, D. E., & Snyder, C. (1990). Belief in a just world and depression. *Sociological Perspectives, 33*, 235–252.
- Sutton, R. M., & Douglas, K. M. (2005). Justice for all, or just for me? More support for self-other differences in just world beliefs. *Personality and Individual Differences, 39*, 637–645.

- Tepper, B. J. (2001). Health consequences of organizational injustice: tests of main and interactive effects. *Organizational Behavior and Human Decision Processes*, *86*, 197–215.
- Thibaut, J., & Walker, L. (1975). *Procedural justice: A psychological analysis*. New Jersey: LEA.
- Tomaka, J., & Blascovich, J. (1994). Effects of justice beliefs on cognitive appraisal of and subjective physiological and behavioral responses to potential stress. *Journal of Personality and Social Psychology*, *67*, 732–740.
- Tyler, T. R. (1994). Psychological models of the justice motive: antecedents of distributive and procedural justice. *Journal of Personality and Social Psychology*, *67*, 850–863.
- Tyler, T. R., & Blader, S. L. (2003). The group engagement model: procedural justice. *Social Identity, and Cooperative Behavior, Personality and Social Psychology Review*, *7*, 349–361.
- Tyler, T. R., & McGraw, K. M. (1986). Ideology and the interpretation of personal experience: procedural justice and political quiescence. *Journal of Social Issues*, *42*, 115–128.
- Tyler, T. R., & Smith, H. J. (1998). Social justice and social movements. In D. T. Gilbert, S. T. Fiske & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 2, pp. 595–629). Boston: McGraw-Hill.
- Van den Bos, K. (2005). What is responsible for the fair process effect? In J. Greenberg & J. A. Colquitt (Eds.), *Handbook of organizational justice* (pp. 273–300). New Jersey: LEA.
- Vermunt, R., & Steensma, H. (2003). Physiological relaxation: stress reduction through fair treatment. *Social Justice Research*, *16*, 135–149.
- Vermunt, R., & Steensma, H. (2005). How can justice be used to manage stress in organizations. In J. Greenberg & J. A. Colquitt (Eds.), *Handbook of organizational justice* (pp. 383–410). New Jersey: LEA.
- Vermunt, R., Wit, A., Van den Bos, K., & Lind, E. A. (1996). The effects of unfair procedure on negative affect and protest. *Social Justice Research*, *9*, 109–119.
- Wakslak, C., Jost, J. T., Tyler, T. R., & Chen, E. (2007). Moral outrage mediates the dampening effect of system justification on support for redistributive social policies. *Psychological Science*, *18*, 267–274.
- Walster, E., Walster, G. W., & Berscheid, E. (1978). *Equity: Theory and research*. Boston: Allyn and Bacon.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063–1070.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, *92*, 548–573.
- Weiss, H. M., Suckow, K., & Cropanzano, R. (1999). Effects of justice conditions on discrete emotions. *Journal of Applied Psychology*, *84*, 786–794.