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The Malleability of Belief in a Just World: Evidence from a Health Resource Allocation Exercise

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ABSTRACT – Belief in a Just World theory proposes that individuals need to believe that people get what they deserve. Although individual differences in just world beliefs have been shown to predict many aspects of subjective well-being research examining their malleability has not been forthcoming. In the present study, participants completed an interactive health resource allocation exercise (CHAT-Choosing Health All Together). Participation in CHAT augmented two kinds of just world beliefs: Perceived fairness of rules and processes (procedural just world beliefs), and also perceived fairness of outcomes and allocations (distributive just world beliefs). In general, this research provides discussion for the malleability of some individual differences in just world beliefs.

Keywords:

Belief in a just world;
Individual differences;
Procedural justice;
Distributive justice;
Attitude change; Well-being

Introduction

Psychologists have argued that justice-the desire not only to receive fair outcomes, but also to be treated fairly-is an important behavioral motive (for review see Tyler & Smith, 1998). While there are a number of psychological theories of justice, one that has been especially influential is Belief in a Just World (Lerner, 1980). Belief in a Just World (BJW) theory proposes that

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individuals are motivated to perceive the world as orderly, predictable, and controllable. Accordingly, individuals strive to believe that people generally “get what they deserve.” Research supports the idea that individuals not only possess but are also protective of a just world view. Attempts to preserve this belief may produce numerous defensive reactions. Notably, individuals who encounter injustice may opt either to help or derogate victims of misfortune, or even to cognitively reinterpret injustice as “actually beneficial” to victims (for recent review see Hafer & Begue, 2005). In light of these possible reactions to injustice, theoretical perspectives on belief in a just world have emphasized their role in defensive coping (e.g., Otto et al., 2006), positive illusions (e.g., Taylor & Brown, 1988), and also system justifying beliefs (e.g., Jost & Hunyady, 2005).

An important additional outlook on belief in a just world is provided by individual differences theory and research. Here, belief in a just world is viewed not only as a universal source of motivation, but also as a variable characteristic of individuals, who can differ from one another in the extent of their desire to perceive the world as fair and just (for review Furnam, 2003). Individual differences in just world beliefs have been shown to predict a wide range of behaviors, evaluations, and outcomes. Perhaps most notably, research in this domain has suggested potential health enhancing effects of just world beliefs – presuming that people “receive what they deserve” may be associated with better mental health and wellbeing (e.g., Dzuka & Dalbert, 2002; Feather, 1991; Lipkus et al., 1996; Otto et al., 2006; Ritter et al., 1990; Sutton & Douglas, 2005). Recent research also suggests potential benefits to physical health, such as stress reactivity (Tomaka & Blascovich, 1994), better health behavior (Lucas et al., 2008) and decreased incidence of myocardial infarction (Kivimäki et al., 2005) have been empirically linked to belief in a just world.

Changing Belief in a Just World

Because of their relationship to wellbeing, researchers have speculated that just world beliefs could comprise a substantive focus of preventative health interventions (e.g., Lucas et al., 2008). Although there are important caveats, it is intriguing to consider that deliberately augmenting a person's view of the world as a fair and just place could be physically and mentally beneficial. Curiously however, research examining the malleability of just world beliefs has not been forthcoming. There are at least two important consequences of this dearth. First, the just world–wellbeing link is thus far supported primarily by correlational research. Although such preliminary findings are encouraging, researchers have yet to employ experimental methods that would bolster claims that just world beliefs are a causal component of wellbeing. Second, the success of many applied uses seems largely predicated on the malleability of individual differences in belief in a Just world. For example, the success of preventative health endeavors may depend on the extent to which the views of individuals with low belief in a just world can be artificially augmented

Despite the possibility that learning more could inform both existing and future research initiatives, comparatively little empirical work has examined the malleability of individual differences in just world beliefs. In this vein, research in at least two new directions may be

required. First, researchers must learn more about the particular kinds of just world beliefs that are malleable. For example, research has generally suggested that personal Just world beliefs (justice for the self), more strongly relate to wellbeing than global just world beliefs (justice for all or for others; Lipkus et al., 1996; Sutton & Douglas, 2005). Similarly, procedural just world beliefs (individual beliefs about the deservedness or rules, processes, and interpersonal treatment) may predict stress more robustly than distributive just world beliefs (beliefs about the deservedness of outcomes or allocations; Lucas et al., 2008). Accordingly, changes in personal or procedural just world beliefs would seem to be more beneficial to preventative health undertakings than global or distributive just world beliefs. More generally, researchers must demonstrate a capacity to alter those specific kinds of just world beliefs that are most relevant to wellbeing, or other outcomes that are of particular interest.

A second direction for new research encompasses methods by which to alter just world beliefs. The use of particular tactics to alter just world beliefs is not well articulated, and applied research endeavors would benefit from learning more about methods that are efficacious in producing these desired changes. For example, recent research suggests that strategically pairing specific preventative health messages with unique types of just world beliefs could be valuable in producing internal attributions for illness prevention (Lucas et al., 2009). In this vein, researchers must demonstrate particular methods that are best suited to altering individuals' beliefs about deservedness, and they must also link these methods to specific and contextually relevant components of just world beliefs. There is some existing support for the malleability of just world beliefs. Lerner himself considered early socialization processes that shape the formation of just world beliefs in children and adolescents (Lerner, 1980). More recently, researchers have uncovered specific developmental characteristics that can influence formation of individuals' just world beliefs. These include familial processes and characteristics (e.g., Sallay & Dalbert, 2004; Schönplflug & Bilz, 2004), and also scholastic influences and experiences (Dalbert, 2004). Although this existing research is quite valuable in explicating the formative origins of just world beliefs, it has not yet suggested particular methods for general experimental research, which most likely will require shorter term procedures to artificially change just world beliefs.

The Present Study

In the present study, we examined the malleability of just world beliefs using a brief participatory health resource allocation exercise. In doing so, we sought to explicate the potential malleability of two specific types of just world beliefs, and also to examine the efficacy of a particular method for changing them. In general, our research was designed to inform future attempts to further explicate the causal nature of the relationship between just world beliefs and wellbeing, or that might examine the potential to reap an applied health benefit from justice oriented research.

We recruited a sample of community members within New Zealand to participate in our health resource allocation exercise. In this simulation, participants considered the best ways to distribute scarce health resources across a broad range of purported health needs. The deliberation process included time to individually consider resource distributions and also group

sessions for participants to learn more about others' preferred resource allocations. As primary dependent variables, we measured changes in two kinds of just world beliefs: Procedural just world (PJW) and Distributive just world (DJW) beliefs. As their names imply, PJW and DJW suggest that individual differences in ones' view of the world as a fair and just place may be dissected into procedural and distributive justice content (Lucas et al., 2007).

Borrowing from other theories of justice, PJW and DJW suggest that individual differences in the perceived fairness of rules, processes, or other forms of treatment can be measured distinctly from those pertaining to the fairness of outcomes, resources or allocations. Although there are many conceptualizations of just world beliefs, this particular approach represents a new direction in this area and has been very promising in its potential to link just world research to other established theories of psychological justice (Lucas et al., 2007; Lucas et al., 2008). In the present study, PJW and DJW seemed especially appropriate since our task involved both specific resource allocations (distributions), and also a structured group deliberation process (rules, processes and treatment).

As a secondary goal, we sought to examine the cross-cultural applicability of two measures of just world beliefs. To date, we know of no study that has utilized PJW and DJW in samples of individuals recruited in another part of the world. Thus, our New Zealand sample provided an opportunity to examine the psychometrics of this particular conceptualization of just world beliefs outside of the United States. To this end, we examined both the proposed factor structure of PJW and DJW, and also the internal consistency of this multidimensional measure.

Method

Participants

One hundred and fourteen participants (29 male) volunteered to take part in a health resource allocation exercise. Participants ranged in age from 26 to 87 years old ($M = 49.96$, $SD = 13.77$). All participants were recruited from the Nelson Marlborough region of New Zealand via personal contacts, newspaper and radio advertisements, and word of mouth. Although nonrandom, sampling of participants attempted to strike a balance of the region that included geography (including remote rural residents, rural, urban-influenced and urban), gender, age, ethnicity and experience of chronic or serious illness in self or family. As compensation, all participants received a small stipend intended to cover transportation and childcare expenses and were provided a modest meal.

Measures and Procedure

CHAT (Choosing Health All Together). All participants took part in CHAT – a simulation exercise in which individuals and groups set spending priorities for health and social services within fixed budgets (Goold, et al., 2004; Goold et al., 2005). CHAT was designed to elicit the preferences of laypersons for healthcare spending priorities, and also as an example of a participatory, deliberative approach to allocation decisions. The CHAT exercise includes a “wheel” (Figure I) with a different colored wedge for each of several health or disability service categories that can be chosen by participants. All categories have varying levels of spending and services (up

to four for each category), with the relative cost of each category and level represented by a certain number of circles.

Participants receive 50 round stickers that designate the quantity of available resources to allocate. An accompanying players' manual describes the levels of coverage for each category. Participants choose categories and levels by placing the designated number of stickers on the CHAT wheel. Peg requirements are additive – lower levels of coverage must be satisfied before adding pegs to select a higher level of coverage within a condition. For instance, participants could choose level I Dental services, by using 2 of 50 stickers (i.e., 4% of total resources) to provide free preventive and routine care for children, school-based clinics, and free emergency treatment for low-income residents. For an additional sticker those with chronic diseases also receive free preventive and routine care, and for a fourth sticker (i.e., 8% of total resources) all adults and children receive free routine and preventive dental care. CHAT content in this administration attempted to reflect the health and disability sector in New Zealand, particularly the Nelson-Marlborough region, and was designed with input from policy makers, citizens and other stakeholders. For instance, a 'Māori Health' category, and also an 'Access' category (transportation, distance, and access to care) were included.

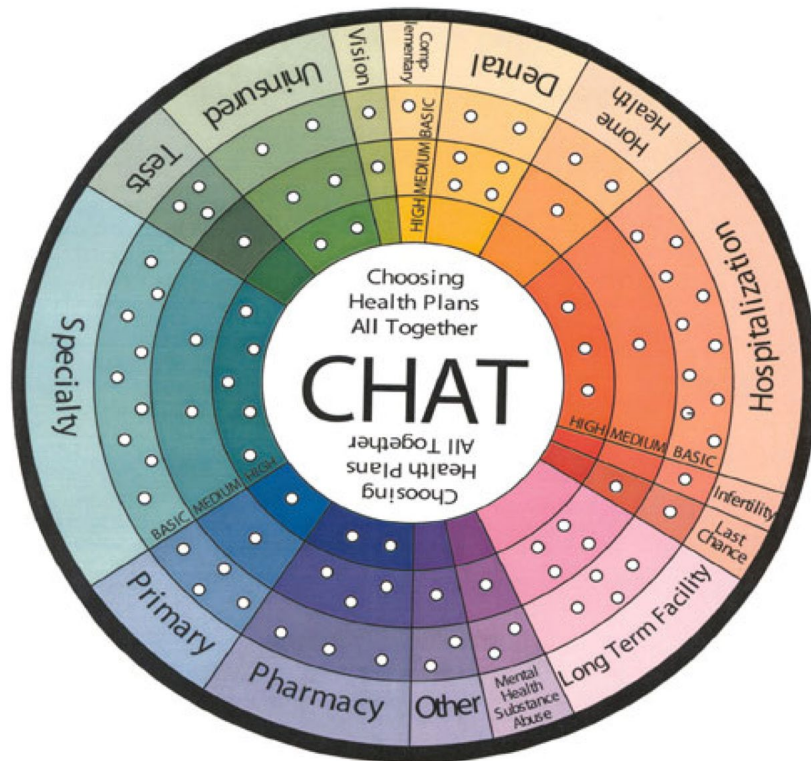
CHAT is completed individually and as a group deliberation in an iterative fashion. In each round, participants choose services constrained by their limited resources as described above. Participants then receive randomly allocated "health event" cards, which they read aloud to the group and are invited to reflect on those events in light of their coverage choices. Health events range from the mundane (e.g., heartburn) to the catastrophic (e.g., spinal cord injury). Discussion in the group proceeds with the aid of a moderator trained to ensure adequate voice and input from all group members. Although not formally required, group choices are encouraged to represent a consensus view of participants. A debriefing at the end of CHAT asks each group to justify to their constituency the group's choices, and then evaluate and comment on the exercise. Questionnaires were administered both prior to and after participating in CHAT.

All exercises took place in the Nelson Marlborough Health District of New Zealand over a period of approximately three months (July – September 2006). The total number of deliberation groups was 12, with the number of participants in each group ranging from 6 to 16 ($M = 7.03$, $SD = 3.56$). All group deliberations took place in public buildings, in private classroom-like settings.

Belief in a Just World. All participants completed an eight-item measure of individual differences in just world beliefs. This measure assessed both procedural (PJW) and distributive (DJW) just world beliefs (Lucas et al., 2007). PJW encompasses beliefs about the fairness of rules, processes and treatment (e.g., "people are generally subjected to processes that are fair") whereas DJW encompasses beliefs about the fairness of outcomes or allocations (e.g., "people usually receive outcomes that they deserve"). PJW and DJW were each measured using four items that were rated on a 7-point Likert-type scale ranging from "strongly disagree" to "strongly agree." Scores were calculated by averaging the four appropriate items for each of the two measures of just world beliefs. Approximately half of our sample ($N = 50$) completed these measures prior to participating in CHAT, while approximately half ($N = 64$) completed these measures after

participating in CHAT. PJW and DJW measures were reliable both before (PJW alpha = .90; DJW alpha = .84) and after (PJW alpha = .85; DJW alpha = .90) participation in CHAT.

Figure 1: CHAT game board illustrating basic, medium, and high coverage of various health categories



Results

We examined the structure of our multidimensional just world measure using principal axis factor analysis. Since a confirmatory covariance structure analysis was not viable with our moderate sample size, we adopted a conventional exploratory factor analytical strategy. To ensure an adequate ratio of participants to factors and items (e.g., Pedhazur & Schmelkin, 1991), we performed this analysis on our total sample. Thus, participants who completed our just world measures before participating in CHAT (i.e., ‘pre-administered’) were combined with those that completed the measure after (i.e., ‘post-administered’). Prior research has suggested that PJW and DJW are moderately correlated with one another (Lucas et al, 2007; Lucas et al., 2008). Therefore, we used oblique rotation and an a priori delta value of 0.6. Factors with eigenvalues greater than 1.0 were interpreted, and this procedure was verified by visual examination of a scree plot.

As seen in Table 1, factor analysis strongly supported a PJW-DJW measurement model. Only two factors had eigenvalues greater than one (Factor 1 = 5.07; Factor 2 = 1.05), and together these accounted for 76.57% of total variance. Four items designed to measure PJW loaded onto the first factor, while four items designed to measure DJW loaded onto the second factor. Consistent with prior research, these factors were moderately correlated with one another (.67). In sum, exploratory factor analysis supported the cross-cultural viability of the PJW-DJW measurement instrument.

Table 1: Principal axis factor analysis

	1 st Factor	2 nd Factor
<i>Procedural Just World</i>		
1. People usually use fair procedures in dealing with others.	.650	.091
2. I feel that people generally use methods that are fair in their evaluation of others.	.924	-.040
3. Regardless of the outcomes they received, people are generally subjected to fair procedures.	.820	-.017
4. People are generally subjected to processes that are fair.	.848	.045
<i>Distributive Just World</i>		
1. I feel that people generally earn the rewards and punishments that they get in this world.	-.145	.949
2. People usually receive the outcomes that they deserve.	.161	.750
3. People generally deserve the things they are accorded.	.059	.707
4. I feel that people usually receive the outcomes that they are due.	.283	.642

Note: $N = 114$. Direct Oblim rotation with delta value of 0.6 performed. Eigenvalues = 5.07 (PJW - 1st factor) and 1.05 (DJW - 2nd factor).

Changes in Just World Beliefs

To determine whether CHAT increased participants' just world beliefs, we performed two separate comparisons of mean differences. These comparisons utilized an independent samples *t*-test, in which 'pre-administered' participants' just world beliefs were compared to those of 'post-administered' participants. Because of the multidimensional nature of our just world measure, we examined changes in procedural and distributive just world beliefs separately. In addition, because we expected CHAT to augment just world beliefs, we examined *t*-values that corresponded to directional (i.e., one-tailed) hypotheses. We computed effect sizes for all observed changes using Cohen's *d*, with small, medium, and large effects indicated by conventionally suggested benchmark values of 0.2, 0.5, and 0.8, respectively (Cohen, 1988). Both PJW and DJW increased as a function of CHAT. Procedural just world beliefs were higher when measured after, rather than before participating in CHAT [post PJW $M = 4.76$, $SD = 0.97$; pre PJW $M = 4.07$, $SD = 1.43$; $t(112) = 3.03$, $p = .003$; $d = .57$]. Likewise, distributive just world beliefs

were higher when measured after participating in CHAT [post DJW $M = 4.42$, $SD = 1.20$; pre DJW $M = 3.47$, $SD = 1.28$, $t(112) = 4.05$, $p < .001$; $d = .77$].

We next examined whether changes produced by CHAT were greater for distributive than procedural just world beliefs. To this end, paired sample t -tests first revealed that PJW was significantly greater than DJW for both 'pre-administered' participants [PJW $M = 4.07$, $SD = 1.43$; DJW $M = 3.47$, $SD = 1.28$; $t(49) = 4.08$, $p < .001$; $d = .44$], and also 'post-administered' participants [PJW $M = 4.76$, $SD = 0.97$; DJW $M = 4.42$, $SD = 1.20$; $t(63) = 2.62$, $p < .01$; $d = .31$]. To determine whether the magnitude of this difference was diminished after participating in CHAT, we compared the 'pre-administered' effect size of the PJW-DJW discrepancy to that of the post-administered effect size. Cohen's d values were transformed to r -based effect sizes (Cohen, 1988), which were then compared to one another using Fisher's r to z transformation. Although the PJW-DJW discrepancy was slightly larger for 'pre-administered' ($r = .19$) than 'post-administered' participants ($r = .14$), this difference was not significant ($z = 0.32$, $p = .75$). We thus concluded that increases in just world beliefs that were produced by CHAT were comparable for PJW and DJW.

Finally, we sought to determine if changes to just world beliefs were robust across our 12 CHAT deliberation groups. Accordingly, we performed one-way analyses of covariance (ANCOVA) on both PJW and DJW. For each analysis, 'version' (pre versus post administered) was entered as the lone between participants factor, and 'subgroup' was included as a covariate. For PJW, 'version' remained significant [$F(1, 111) = 7.77$, $p < .01$, partial $h^2 = .07$] even after controlling for 'subgroup' variance [$F(1, 111) = 2.09$, $p = .15$, partial $h^2 = .02$]. Likewise, 'version' remained a significant predictor of DJW [$F(1, 111) = 14.96$, $p < .001$, partial $h^2 = .12$] even after controlling for variance accounted for by 'subgroup' [$F(1, 111) = 0.57$, $p = .45$, partial $h^2 = .01$]. Thus, we concluded that CHAT produced increases in both kinds of just world beliefs that were robust across subgroup classification.

Discussion

Our results suggest that participating in CHAT augmented individuals' just world beliefs. This effect was similar for individual differences in both procedural and distributive just world beliefs, and was generally robust to deliberation group classifications that existed within CHAT. There are at least two important implications of these results.

First, the results demonstrate that short term changes to individual differences in just world beliefs can be produced. This finding suggests that it may be possible to design experimental manipulations for further exploring the link between just world beliefs and wellbeing. Experimental manipulations could also be formulated as an exploration of deliberate interventions intended to influence, for example, health behaviors. In sum, the malleability of individual differences in just world beliefs suggests numerous potential avenues for future experimental research.

A second implication concerns the use of CHAT as a method of augmenting belief in a just world. While some scholars have suggested that just world beliefs can be influenced by experience, we are unaware of any prior studies demonstrating an effective attempt to deliberately alter them.

Although future research will be required to better understand the mechanisms by which CI IAT produced this effect, several possibilities are suggested by theory and research on psychological justice. For example, procedural justice theories have suggested that individuals who perceive process control (i.e., 'voice') in a deliberative decision may be more satisfied with its outcome than those who do not (e.g., Thibaut & Walker, 1975). Thus, one reason for the impact of CHAT on PJW and OJW may be its structure of informed and inclusive participation. Evidence that CHAT may be used to impact just world beliefs suggests avenues for future research that could involve methods, mediators, and consequences of artificially altering individual differences in just world beliefs.

Cross-Cultural Implications

In its secondary aim, our research suggests that the measurement of distinct procedural and distributive just world beliefs may be cross-culturally viable. We obtained a multidimensional factor structure from our New Zealand sample that was consistent with those obtained in studies conducted within the United States. The availability of a cross-culturally sustainable measure of just world beliefs could open doors for cross-cultural research endeavors, including comparisons of procedural and distributive just world beliefs, and also the relative associations of their antecedents and consequences. Although this direction is promising, additional psychometric research will be required, as our present study included only participants from one region of a single country, thus preventing an examination of other important psychometric characteristics of procedural and distributive just world beliefs, such as their cross-cultural measurement invariance.

Limitations

There are a number of limitations that mandate a cautious interpretation of our results. Foremost, our sample was nonrandom and recruited exclusively from New Zealand. Therefore, we do not know whether CHAT would enhance belief in a just world in other contexts, or for other people. We also do not know the value of CHAT relative to other possible methods of augmenting just world beliefs. For example, requiring participants to engage in expressive writing about issues of justice might comprise one alternative method for changing just world beliefs. However, since this or other additional methods were unavailable in our design, we are unable to comment on the specific benefits of using CHAT to alter just world beliefs. Finally, although our results suggest that CHAT may be capable of augmenting PJW and DJW, there are many other individual differences measures of just world beliefs, and our results do not address whether this method is viable in altering these alternative operationalizations.

Like many intervention studies, our research is limited in that we were unable to assess individual level change in just world beliefs. Although an independent groups design was advantageous in some respects, such as eliminating the potential for recall bias and also the need for parallel forms of our just world measures, an inability to describe individual changes in just world beliefs comprises a limitation of this research that will need to be addressed in future studies. In many respects then, our research is best viewed as an initial demonstration of the

feasibility of exploring artificial interventions for changing just world beliefs, upon which future studies can build by implementing more rigorous designs and methodology.

There are limitations to the preventative health implications of our research as well. While our results suggest that short-term changes to just world beliefs may be viable, we do not know the extent to which long term changes are possible. This feature may be particularly important to preventative health endeavors in that long term change could be required for individuals to reap health benefits from strong just world beliefs. An additional limitation is that our research does not examine whether changes in just world beliefs link to changes in wellbeing. Although prior research has suggested that just world beliefs are associated with better health, this evidence is predominantly correlational. Unfortunately, our present research does not directly cover this aspect of existing research since we did not examine changes in participants' wellbeing that might have resulted from changes in just world beliefs.

In spite of these limitations, our results can be related to several current issues and future directions that encompass research on just world beliefs. In particular, we suggest that researchers may be able to change individual differences in just world beliefs, and that this may afford an opportunity to resolve several existing issues, such as further elucidating the nature of the just world link to wellbeing. In addition, procedures that alter individual differences could afford altogether new directions for research, such as probing the capacity of just world beliefs to influence preventative health endeavors.

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