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Abstract

The objective of the current study was to explore the influence of the belief in a just world (BJW) on the psychological well-being among earthquake victims following the Great Wenchuan Earthquake. A sample of Chinese undergraduates ($N = 494$) completed a battery of questionnaires, including the Just World Scale, the Feelings of Uncertainty Scale, the Future Scale, the Hope Scale, the Self-Rating Depression Scale, and the Self-Rating Anxiety Scale. Results provided strong support for the important role of personal BJW in maintaining postquake mental health. BJW had a greater effect on particularly vulnerable victim groups, such as woman participants and participants who had suffered the loss of their families or friends in the earthquake. Besides, feelings of uncertainty and future orientation partially mediated the relationship between BJW and psychological well-being (depression, anxiety, and hope). Theoretical and practical implications were discussed, and future research directions were provided.

Keywords

belief in a just world, depression, anxiety, hope, earthquake

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Concept of Belief in a Just World (BJW)

According to Lerner and Miller (1978) just world hypothesis, individuals have a need to believe that they live in a world where people generally get what they deserve and deserve what they get. The belief in a just world (BJW) enables the individual to confront his physical and social environment as though they were stable and orderly. Without such a belief, it would be difficult for the individual to see the world in a predictable and meaningful way. Thus, the BJW is often seen as “a positive illusion” that provides the individual with psychological buffers against the harsh realities of the world.

Since Lerner first introduced the BJW concept in 1965, empirical investigation of the BJW hypothesis has progressed through 4 decades. Earlier BJW research has concentrated on the negative side of BJW, namely, victim derogation and devaluation. A major difference in current research has been a shift to view BJW as a positive coping mechanism with many psychological benefits (Furnham, 2003).

On the basis of the existing literature, we summarized the adaptive functions of BJW into two perspectives: (1) The prevention perspective: How BJW helps individuals reduce negative psychological symptoms? (2) The promotion perspective: How BJW helps individuals promote positive psychological state? These two perspectives are not competing but complementing, as they all pointed to the important role of BJW in sustaining mental health.

From the prevention perspective, BJW was found to be negatively associated with many indices of mental health problems, such as anger (Dalbert, 2002), depression (Ritter, Benson, & Snyder, 1990), and anxiety (Otto, Boos, Dalbert, Schöps, & Hoyer, 2006). In a questionnaire study with flood victims, Otto et al. (2006) investigated the influence of BJW on important dimensions of mental health and psychopathology. Results showed that when controlled for age, sex, substantial stressors, and losses caused by the flood, personal BJW was still negatively associated with anxiety, depression, and general psychological distress.

From the promotion perspective, BJW was found to be linked with measures related to psychological well-being. For example, individuals with a strong BJW have been shown to be more satisfied with their lives (Lipkus, Dalbert, & Siegler, 1996), to show higher levels of self-esteem (Feather, 1991) and optimism (Littrell & Beck, 1999), and to report more positive mood (Bulman & Wortman, 1977).

Although the two perspectives all point to the potential benefits of BJW, to date very few studies have been carried out to integrate the two perspectives into one theoretical framework and explore the functioning mechanisms

of BJW on both aspects. Therefore, empirical integration of the two perspectives is necessary and may shed light on how BJW functions as a unique coping resource. On the basis of previous evidence, we attempted to bring together these two lines of research in the present study.

Disaster is defined as a collective stress experience carrying a risk to mental health (Weisaeth & Eitinger, 1993). It strikes without discrimination, inflicting death, physical injury, deprivation, and mass devastation. A disaster could have far-reaching effects in many major areas of survivors' lives, making it extremely difficult for these people to rebuild their lives. In face of a threatening and unforeseeable disaster like the earthquake, individuals may rely on their core beliefs about the world to sustain themselves through the difficult situation.

As a powerful personal coping resource, BJW serves important adaptive functions that help individuals cope with critical life events. The stronger BJW the individual possesses, the better they can be expected to cope. Dalbert (2001) explained that BJW can be highly functional for three reasons: First, it enables people to place more trust in others, to believe that they will be treated fairly by others and will not fall victim to unforeseeable disasters. Second, it provides a conceptual framework that helps individuals to interpret the events of their personal lives in meaningful ways. Individuals high in BJW may assimilate observed or experienced injustice to their just world schema by justifying unfairness as being at least partly self-inflicted, by playing down the injustice or explaining the perpetrator's action as unintentional, and by avoiding self-focused ruminations (Hafer & Correy, 1999). Assimilating unfairness to one's BJW promotes the adaptive coping processes of finding meaning in one's life, allaying feelings of anger and enhancing mental health (Dalbert, 2001). Third, it obliges people to act fairly themselves and enables people to invest in long-term goals. Individuals high in BJW tend to believe that a positive future is a reward for the individual's behavior and character and will try to establish justice in reality whenever possible. Moreover, they are more likely to invest in their futures because they are confident that their investments will be fairly rewarded.

Research has documented that individuals have intrinsic motivation for growth and will search for new ways to enable growth following trauma and adversity (Tedeschi & Calhoun, 2004). In line with these findings, we assumed that strong just world believers would be motivated to strive toward long-term goals and focus on meeting long-term aspirations as they perceive controllability in their own fate as well as trust in the overall fairness of the environment. Therefore, individuals high in BJW would be more likely to show optimism or hopefulness toward their future following the traumatic event.

Background and Objectives of the Present Study

On May 12, 2008, an earthquake of magnitude 8.0 on the Richter scale struck Sichuan province in southwest China centered in Wenchuan County, a hilly area 100 km from the provincial capital Chengdu. Nearly 70,000 people were killed, 373,000 were injured, and 18,000 were listed as missing, precipitating the deadliest natural disaster in the history of China since the 1976 Tangshan earthquake. The powerful earthquake wrought incalculable havoc on lives and properties in Sichuan province. The death and destruction experienced by millions of people in Sichuan will leave some with scars lasting a lifetime. The effect of the earthquake goes far beyond the immediate devastation. It may bring great changes in people's view about the world, their attitudes toward life as well as plans and ambitions regarding their future.

The current study is a questionnaire survey investigating the role of the BJW in contributing to the psychological adaptation among earthquake victims. We attempted to integrate the two perspectives of BJW researches into one framework. On one hand, from the prevention perspective, the associations of BJW with depression and anxiety may be further examined. On the other hand, from the promotion perspective, the role of BJW in enhancing hope could be revealed by examining the mediation mechanisms.

We introduced the concept of hope as the measure in the promotion perspective. *Hope* is defined as a cognitive set that is based on a reciprocally derived sense of successful agency (goal directed determination) and pathways (planning of ways to meet goals; Snyder et al., 1991). Hope serves an important role in promoting psychological well-being. It has been linked with a survival advantage after stroke (Lewis, Dennis, O'Rourke, & Sharpe, 2001), and hopefulness contributed to the variance in postearthquake reactions as much as earthquake exposure did (Nunn, Lewin, Walton, & Carr, 1996). Previous study has found that writing about the future led to significant increases in optimism (Zimbardo & Boyd, 1999). Hope, as a general expectancy for the future, is seen as the close cognate of optimism. However, optimists tend to anticipate good things to be plentiful in the future, whereas hopeful persons hold a will to survive (agency) and means to achieve their goals (pathway; Snyder et al., 1991). The two subcomponents of hope seem to be essential for people to strive in traumatic crises. We tested in the current study whether BJW could raise individuals' level of hope by reinforcing their future orientation. We hypothesized that BJW could raise the hopefulness among earthquake victims by helping them reduce

intrusive rumination and leading them to think more effectively about future goal pursuit.

Under these two perspectives, we also attempted to explore the potential mediating mechanisms between BJW and depression, anxiety, and hope. We used two mediators in the current study: The first mediator was feelings of uncertainty. As reviewed in Evans and Cohen (1987), there is considerable evidence that environmental stressors that are uncertain (unpredictable and uncontrollable) cause greater stress. In several studies, feelings of uncertainty have frequently been associated with negative psychological well-being (Goto, Wilson, Kahana, & Slane, 2006). As Van den Bos and Lind (2002) indicated, justice is important because it reduces uncertainty. Therefore, we hypothesized that BJW could contribute to the psychological adaptation of earthquake victims by reducing their feelings of uncertainty after the earthquake.

The second mediator we chose was future orientation. Future-oriented people are self-responsible and supers achievers who seek long-term gratification and show great concern about long-term negative consequences. They are good at avoiding temptations and distractions and devote most of their energies and actions to the achievement of a goal (D'Alessio, Guarino, Pascalis, & Zimbardo, 2003). Research indicated that a belief in a just world may reinforce individuals' future orientation. People need to believe in a just world in part because such a belief helps them work toward long-term goals and do so in such a way that they are deserved (Hafer, Begue, Choma, & Dempsey, 2005). And vast amount of research has found that future orientation was positively associated with indices of subjective well-being (SWB), such as optimism, active problem-solving coping, and emotional growth coping (Zimbardo & Boyd, 1999). Thus, we hypothesized that BJW could contribute to the psychological adaptation of earthquake victims by strengthening their future orientation.

The current study aimed at answering these four questions:

1. Would the earthquake shape people's belief in a just world?
2. Could BJW contribute to people's psychological adaptation following the earthquake? If it could, which subscale of BJW serves the most important role?
3. Would BJW play a stronger role in some particular victim groups?
4. Would BJW contribute to people's psychological health through some mediators (feelings of uncertainty and future orientation) besides its direct effect on psychological well-being?

The hypothetical model of the current study was depicted in Figure 1.

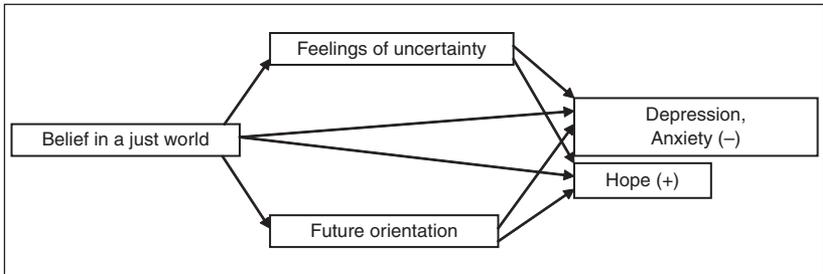


Figure 1. Hypothesized paths of the present study

Method

Participants and Procedure

Our participants were from a college located in Mianzhu city in Sichuan province, which is among the worst quake-hit areas (Ministry of Civil Affairs, 2008). The students resumed classes on August 11, 2008 (3 months after the 5 · 12 Wenchuan earthquake).

Altogether 500 sets of questionnaires were distributed and 496 sets were returned with 494 valid responses (valid response rate 98.8%). Two records were discarded due to incomplete data or random responses. The remaining sample consisted of 494 students. There were 150 male students (30.4%) and 341 female students (69%). A total of 3 participants did not indicate their gender (0.6%). Participants' ages ranged from 17 to 24 years, with an average age of 20.31 years ($SD = 0.94$), and 2 participants did not indicate their age (0.4%). A total of 282 participants were from the disaster area (57.1%), and 204 were from the nonhit areas (41.3%), of which 8 participants did not indicate their home locations (1.6%); 439 participants did not suffer the loss of families or friends in the earthquake (88.9%), whereas 47 participants did (9.5%), and 8 participants did not reveal this information (1.6%).

Instruments

Just world belief. We used the Chinese version of a 19-item Just World Scale for College Students, developed by Du, Zhu, and Li (2007) as a measure of just world belief within the context of Chinese culture. The scale contains three subscales: (1) ultimate BJW (7 items, $\alpha = .77$, for example, "I am confident that justice will finally prevail over injustice"; "Those who have suffered will be compensated one day"), (2) unjust world belief (7 items, $\alpha = .67$, for

example, "A lot of people suffer an unjust fate"; "I feel that even important decisions are often unfair"), (3) personal BJW (5 items, $\alpha = .64$, for example, "I think that important decisions that are made concerning me are usually just"; "I believe that I usually get what I deserve"). Scale response items were 1 = *strongly disagree* to 5 = *strongly agree*.

Feelings of uncertainty. We developed an ad hoc 6-item scale to measure feelings of uncertainty following the earthquake. Items mainly investigated people's lack of predictability of their future and loss of controllability over the surrounding environment. All items were rated on 5-point Likert-type scales ranging from 1 = *totally disagree* to 5 = *totally agree*. The alpha coefficient was .68, and sample items included "It is almost impossible to predict natural disaster accurately"; "Earthquake dampened people's feel of control over their surrounding environment."

Future orientation. The instrument we used to assess future orientation was the future scale from the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999). The validated Chinese version of the future scale consists of six statements regarding the tendency to plan for and invest in future goals, with response format ranging from 1 = *totally disagree* to 5 = *totally agree*. The alpha coefficient was .70. Sample items included "I believe that a person's day should be planned ahead each morning"; "When I want to achieve something, I set goals and consider specific means for reaching these goals."

Hope. We used Snyder's the Hope Scale (HS; Snyder et al., 1991). As our participants were Chinese college students, we translated the Hope Scale from English to Chinese and then back-translated into English to ensure equivalence of meaning (Brislin, 1980). The scale included two dimensions: (1) Pathways (4 items, $\alpha = .60$, for example, "I can think of many ways to get out of a jam"), (2) Agency (4 items, $\alpha = .80$, for example, "I energetically pursue my goals"). Another 4 items were distracters. Response options ranged from 1 = *totally uncharacteristic* to 4 = *totally characteristic*. We slightly modified the instructions to lead the participants focus on what is going on in their life "at this moment."

Depression. The Self-Rating Depression Scale (SDS) was originally developed by Zung (1965). Its Chinese version was validated with sound reliability and validity (Zhang, 1993). The SDS contains 20 items with 10 reverse scored. Respondents were asked to rate the presence of a depressive symptom on a Likert-type scale ranging from 1 = *never or occasionally* to 4 = *always*. High scores correspond to higher levels of depression. The Cronbach's alpha for the measure in the current study was .80.

Anxiety. The Self-Rating Anxiety Scale (SAS) was originally developed by Zung (1971). Its Chinese version was validated with sound reliability and

validity (Zhang, 1993). The SAS contains 20 items with 5 items reverse scored. Respondents were asked to rate the presence of an anxious symptom on a 4-point Likert-type scale ranging from 1 = *never or sometimes* to 4 = *most of the time or all the time*. High scores correspond to higher levels of anxiety. The Cronbach's alpha for the measure in the current study was .84.

Results

The Comparison of BJW in Different Earthquake Areas and Different Victim Groups

One-way ANOVAs were performed for two demographic variables (home location, casualty) to investigate the effect of earthquake on participants' just world beliefs.

Results showed that, overall, participants whose hometowns were located in the quake-hit area scored significantly lower on the BJW scale than those whose hometowns were not located in the quake-hit area, $F(1, 484) = 5.198$, $p = .023$. Participants who were from the quake-hit area exhibited higher levels of unjust world belief than participants who were not, $F(1, 484) = 11.135$, $p = .001$.

Results also revealed that participants who had suffered the loss of families or friends in the earthquake scored significantly lower on the BJW scale than participants who had not, $F(1, 484) = 7.157$, $p = .008$. This kind of difference can also be seen on the ultimate BJW subscale, $F(1, 484) = 5.500$, $p = .019$, and personal BJW subscale, $F(1, 484) = 4.897$, $p = .027$.

The means, standard deviations, and F values were listed in Table 1.

The Relationship of BJW and Postquake Adaptation

The means, standard deviations, and Pearson correlations among the three just world belief subscales, feelings of uncertainty score, future orientation score, two hope subscales, depression, and anxiety scores were shown in Table 2.

Ultimate BJW, unjust world belief and personal BJW were significantly correlated with feelings of uncertainty, future orientation, hope, depression, and anxiety in the predicted directions.

Specifically, participants with high levels of ultimate BJW and personal BJW were more future oriented, less subjected to feelings of uncertainty, more hopeful, and exhibited less symptoms of depression or anxiety. Participants with high levels of unjust world belief showed the opposite pattern.

Table 1. Means, Standard Deviations, and *F* Values of BJW in Different Earthquake Areas and Different Victim Groups

	Non-Hit Area <i>M</i> (<i>SD</i>)	Hit Area <i>M</i> (<i>SD</i>)	<i>F</i>	No-Casualty <i>M</i> (<i>SD</i>)	Casualty <i>M</i> (<i>SD</i>)	<i>F</i>
Just world scale	61.89(7.672)	60.26(7.845)	5.198*	61.24(7.741)	58.06(7.748)	7.157**
Ultimate BJW	25.06(4.058)	24.67(3.869)	1.175	24.94(3.964)	23.53(3.488)	5.500*
Unjust world belief	22.12(3.445)	23.19(3.515)	11.135***	22.64(3.502)	23.49(3.787)	2.484
Personal BJW	16.96(2.781)	16.78(2.663)	.542	16.93(2.702)	16.02(2.566)	4.897*

Note: BJW = belief in a just world.

*indicates $p < .05$. **indicates $p < .01$. ***indicates $p < .001$ (the same below).

In addition, feelings of uncertainty were positively associated with depression and anxiety and negatively associated with hope. Future orientation was negatively associated with depression and anxiety and positively associated with hope. However, the correlation between feelings of uncertainty and future orientation was not significant.

We further conducted hierarchical regression analyses for each of the three outcome variables (depression, anxiety, and hope) with all demographic variables (gender, age, home location, casualty) entered as control variables in the first block and the three subscales of Just World Scale entered stepwise in the second block. Thus, we were able to assess how much variance could be explained by each dimension of the BJW scale and figure out which dimension is the most important predictor for outcome variables.

The results of these analyses were summarized in Table 3. The presented results were not affected by multicollinearity among predictors, as evident by all tolerance above .70.

Ultimate BJW did not enter the regression equations across all three conditions, indicating that it was not a significant predictor of postquake psychological well-being. Unjust world belief was a significant predictor to outcome variables, but the variance it could explain was limited (2.6% in depression, 2.7% in anxiety, and 2.0% in hope). Consistent with results in Western samples, personal BJW emerged as the most important predictor of outcome variables as it accounted for 9.7% of the variance in depression, 8.6% in anxiety, and 10.8% in hope. These findings fully support our hypothesis that personal BJW is particularly effective in predicting psychological adjustment.

Table 2. Means, Standard Deviation, Pearson Correlations of Study Variables^a

Variables	M	SD	1	2	3	4	5	6	7	8
1. Ultimate BJW	24.79	3.952								
2. Unjust world belief	22.75	3.537	-.302**							
3. Personal BJW	16.84	2.705	.505**	-.344**						
4. Feelings of uncertainty	19.91	3.925	-.109*	.302**	-.230**					
5. Future orientation	22.39	3.289	.231**	-.122**	.195**	-.066				
6. Pathway hope	11.87	1.605	.209**	-.122**	.217**	-.114*	.440**			
7. Agency hope	11.62	1.833	.266**	-.129**	.336**	-.187**	.486**	.561**		
8. Depression	38.69	7.515	-.229**	.243**	-.314**	.266**	-.358**	-.361**	-.484**	
9. Anxiety	34.21	7.887	-.209**	.259**	-.304**	.296**	-.253**	-.272**	-.367**	.729**

a. N = 494.

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

Table 3. Predictions of Psychological Well-Being by Control Variables and Just World Beliefs

	Dependent Variable								
	Depression			Anxiety			Hope		
	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2	β
Control variables	.027	.027*		.040	.040***		.028	.028**	
Independent variables	—	—	—	—	—	—	—	—	—
ultimate BJW									
Personal BJW	.125	.097***	-.317***	.126	.086***	-.297***	.136	.108***	.334***
Unjust world belief	.151	.026***	-.176***	.153	.027***	-.179***	.156	.020***	.165***

Notes: BJW = belief in a just world; "—" indicates failing to enter the regression model.

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

The Role Played in Particular Victim Groups

We performed a set of MANOVAs with depression, anxiety, and hope as dependent variables and BJW and each of the three demographic categorical variables (gender, home location, and casualty) as between-subject factors. Initial MANOVA analysis showed that just world belief may not only interact with gender to affect depression but may also interact with casualty to affect depression and anxiety. Additional ANOVAs were conducted to clarify the potential interaction effect.

We divided all participants into two groups according to their scores on the Just World Scale: high-BJW group (one standard deviation above mean score) and low-BJW group (one standard deviation below mean score).

First, we conducted a 2 (gender: male, female) \times 2 (BJW score: high, low) ANOVA examining the dependent measure of depression. The analysis revealed a main effect of just world belief, $F(1, 149) = 44.614, p = .000$, qualified by its interaction with gender, $F(1, 149) = 7.959, p = .005$. However, the main effect of gender was not significant, $F(1, 149) = 3.208, p = .075$. Furthermore, we found that in the low-BJW group, woman participants scored significantly higher on depression scale than male participants, $F(1, 72) = 10.909, p = .001$. In contrast, in the high-BJW group, the difference in depression score between men and woman participants was not significant, $F(1, 77) = .559, p = .457$. We may conclude that compared with men, just world belief had a greater effect on women's postquake depression level.

Second, we conducted 2 (casualty: yes, no) \times 2 (BJW score: high, low) ANOVAs on each of the dependent measures (depression and anxiety). For depression, the analysis revealed a main effect of just world belief, $F(1, 148) = 35.474, p = .000$, qualified by its interaction with casualty, $F(1, 148) = 5.165, p = .024$, but the main effect of casualty was not significant, $F(1, 148) = .014, p = .907$. However, further analysis showed that in the low-BJW group as well as high-BJW group, participants who had suffered the loss of their families or friends in the earthquake did not have a significantly higher depression score than the rest of the participants, $F(1, 72) = 3.458, p = .067$ and $F(1, 76) = 2.648, p = .108$, respectively.

As for anxiety, the ANOVA yielded a main effect of just world belief, $F(1, 148) = 30.669, p = .000$, a main effect of casualty, $F(1, 148) = 5.091, p = .026$, qualified by an interaction between the two, $F(1, 148) = 4.150, p = .043$. Furthermore, we found that in the low-BJW group, participants who had suffered the loss of their families or friends in the earthquake scored significantly higher on anxiety scale than the rest participants, $F(1, 72) = 11.140, p = .001$. In contrast, in the high-BJW group, participants who had suffered the loss of families or friends in the earthquake did not score significantly higher on anxiety scale than the rest of the participants, $F(1, 76) = .036, p = .850$. We can see that BJW do buffer stress and the adaptive function of BJW was particularly pronounced for participants whose families or friends were among the casualties of the earthquake.

Path Analysis of BJW and Psychological Adjustment

A path analysis was conducted to test the mediating role of feelings of uncertainty and future orientation between BJW and the three outcome variables (depression, anxiety, and hope). The resulting model is shown in Figure 2. The model fit the data well (fit indices shown in Table 4). Sobel's (1988) tests indicated that all the indirect effects were significant.

We may see from Figure 2 that BJW had a direct as well as indirect effect on outcome variables. Specifically, feeling of uncertainty and future orientation partially mediated the path from BJW to depression and anxiety, and future orientation partially mediated the path from BJW to hope.

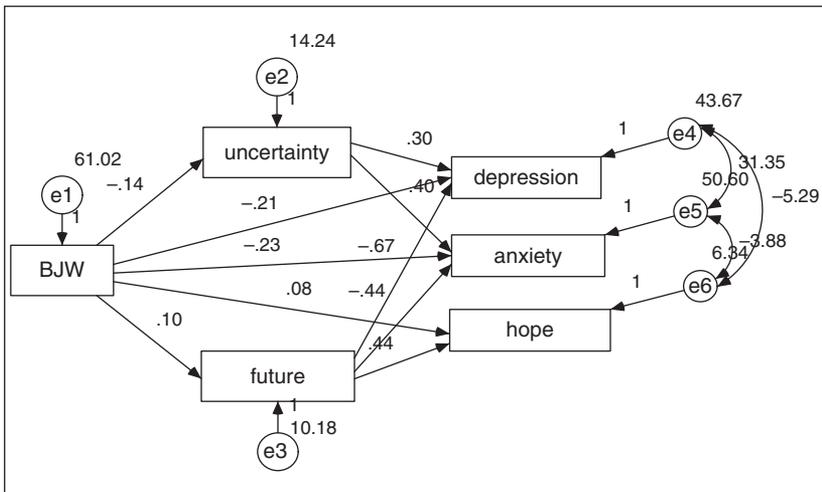
Discussion

The Role and Functioning Mechanism of BJW

As the Pearson correlations in Table 2 indicated, the variables under this study displayed significant correlations in the expected direction. In particular, strong

Table 4. Model Fit Indices of Path Analyses^a

	χ^2	df	χ^2/df	<i>p</i>	NFI	CFI	GFI	AGFI	RMSEA
Model	6.0	2	3.0	0.05	0.99	0.99	0.99	0.96	0.06

a. *N* = 494.**Figure 2.** Resultant model of the present study

believers of just world were more future orientated and hopeful, exhibited less feelings of uncertainty, and showed fewer symptoms of depression or anxiety. These results were consistent with previous studies (Hafer et al., 2005; Ritter et al., 1990; Otto et al., 2006).

The results of multiple regression analyses verified that personal BJW plays an important role in predicting psychological health. The result identified with a consistent body of literature and was cross-culturally invariant. Researchers have provided explanations from different perspectives. Some researchers emphasized the necessity of differentiating between a general BJW and a more personal BJW (Dalbert, 1999; Lipkus et al., 1996). The personal BJW reflects the belief that events in one's own life are just; the general BJW reflects that, basically, the world is a just place. Research has shown that individuals tend to endorse the personal BJW more strongly than the general BJW and that the personal BJW is more important in predicting mental health (Dalbert, 1999; Dzuka & Dalbert, 2002; Otto et al., 2006;

Sutton & Douglas, 2005). Moreover, the unique role of personal BJW can be interpreted as a consequence of its powerful assimilation function (Dzuka & Dalbert, 2007).

Alternatively, a “self-other distinction” in the just world theory was proposed to explain the role of BJW. In other words, it is important to distinguish the belief that the world is fair to others (BJW-others) from the belief that it is fair to the self (BJW-self). Recent studies did reveal that BJW-self is uniquely related to indices of SWB, such as positive affect, life satisfaction, and greater purpose in life (Bègue & Bastounis, 2003; Lipkus et al., 1996), whereas BJW-others is uniquely related to harsh social attitudes such as prejudice toward the elderly and the poor (Bègue & Bastounis, 2003).

Besides, we also explored the potential mediating mechanisms between BJW and psychological well-being. Path analysis suggested that feelings of uncertainty and future orientation partially mediated the relationship between BJW and outcome variables (depression, anxiety, and hope; see Figure 2).

When individuals encounter strong evidence that the world is not just and fair after all, they experience a heightened sense of fear, stress, anxiety, and vulnerability. Previous research found that in the days following the terrorist attacks, Americans reported a heightened sense of uncertainty about the world. A majority of Americans (63%) reported that their personal sense of safety and security was shaken by the attacks. Even 6 months after September 11, 47% of Americans still reported feeling less safe and secure because of the terrorist attacks (Kaiser, Vick, & Major, 2004). Individuals may find it difficult to predict what is happening in the future and may lose their sense of control over the environment as well as their own destiny. As Van den Bos and Lind (2002) pointed out, “fairness matters to people because fairness judgments give them an opportunity to manage their uncertainty about important life events or issues.” As we expected, BJW contributed to the psychological adjustment of earthquake victims by reducing their postquake uncertainty feelings.

Another function of a belief in the just world is to provide the confidence needed to invest in long-term deserved outcome. Strong believers tend to commit themselves to the pursuit of long-range goals and tend to be more future oriented. Consistent to the existing literature, we found that BJW contributed to the psychological adaptation of earthquake victims through the process of future-orientation inspiring.

Disaster and People's BJW

ANOVA analysis showed that natural disasters like the earthquake would, to varying degrees, shake the foundations of people's BJW; this is consistent

with some recent studies as well as supported by our follow-up in-depth interviews. A journalist in Mianzhu News Center recalled:

I could remember very clearly, I was overwhelmed by despair at that time. It seemed that Mianzhu was deserted by the world. We just couldn't walk out from the difficult situation by ourselves. I was sure then Mianzhu would be cut off from the outside world. Plague would give Mianzhu a last blow. By then no one would come to save us, just leaving us to ourselves. What an unfair misery! I was overcome by despair and feared that Mianzhu would disappear from the world.

February 18, 2009¹

Earlier research suggested that BJW is fairly stable across the life span (Furnham, 2003). It is a personality characteristic that remains reasonably stable over time and does not appear to differ across situations (Dalbert, 2001).

However, recent studies showed that BJW could also be shaped by personal experience. For example, victims of mobbing (Cubela-Adoric, & Kwartuc, 2007) and of student violence (Dzuka & Dalbert, 2007) had lower BJW scores than their nonvictim counterparts. In line with the observation, researchers proposed that BJW may decline after serious and enduring life events such as long-term unemployment or imprisonment (Cubela-Adoric, 2004; Otto & Dalbert, 2005). Besides, exposure to an event that is unexpected and perceived as extremely unfair could also weaken people's BJW because coping resource may suddenly appear inadequate for maintaining the belief in a just world (Bobocel & Hafer, 2007).

Based on previous evidence, it seems to be more reasonable to interpret BJW as being partly experiential. As Cubela-Adoric & Kwartuc (2007) pointed out, injustice would only affect on BJW when reaching a specific degree of adversity. When individuals' BJW are seriously challenged, they are motivated to defend this fundamental belief by using various strategies such as playing down the injustice or avoiding self-focused rumination. However, when the injustices are well above some subjectively "critical point" and would not be assimilated to the existing just world schema, their endorsement of BJW would decline.

Vulnerable Victim Groups in Disaster

Interaction analysis showed that BJW had a greater effect on woman participants and participants who had suffered the loss of their families or friends in

the earthquake. BJW could help these vulnerable people better cope with such an unjust critical life event as strong BJW-believers showed more well-being than did weak believers. Previous studies have confirmed that the adaptive effect of BJW on mental health is particularly pronounced in people exposed to extreme adversity, especially when it can be seen as non-self-inflicted and, hence, undeserved. To the degree that BJW can provide an interpretive framework for such unjust experience, the victims' mental health would be protected (Dalbert, 2001).

Implications and Limitations

The current study is the first attempt to empirically investigate BJW within the context of Chinese culture following a natural disaster. It provides evidence in understanding how Chinese people endorse BJW and how this kind of belief may contribute to their postquake adaptation.

The present study is also unique because it explored the potential mediating mechanisms between BJW and postquake psychological well-being under both the prevention and promotion aspects. The results confirmed the partially mediating role of feeling of uncertainty and future orientation and may provide insights into how BJW functions as a unique coping resource.

The results also have practical values. First, insights into the coping mechanisms that mediate the effect of BJW on well-being may help individuals preserve psychological health in the face of an extreme unjust event, such as a devastating natural disaster. Second, identification of these high-risk groups after the disaster, continued surveillance, and focused mental health interventions for those with persistent problems may be a preferable response of post-disaster mental health services.

The present study also has several limitations that should be noted.

First, the cross-sectional design of our study prevented us from making causal statements as longitudinal studies would allow. Future research could explore more potential mediators affecting the relationship between BJW and psychological well-being. Longitudinal studies are required to further investigate the functioning mechanisms on both the positive and negative mental health dimensions. Moreover, besides hope, investigation of other positive mental health dimensions such as resiliency and meaning in life may provide more in-depth understanding of these phenomena.

Second, as all variables were assessed with self-report data, common method variance may exert a confounding influence on our results, yielding potentially misleading conclusions. We follow the recommendations of Podsakoff, MacKenzie, Lee, and Podsakoff (2003) to control and assess the common

method variance. Out procedural remedies included using different scale end-points and formats for the predictor and criterion measures. Statistical detection showed that the first factor in our factor analysis accounted for only 29.10% of the total variance in the data, suggesting that common method variance was not a significant problem in our study.

Finally, further studies are needed to investigate under which conditions BJW fosters the assimilation of unjust experience and under which conditions unjust experience can no longer be justified but instead undermines BJW (Dalbert, 2007). It is possible that the process follows a “threshold” principle.

Summary and Conclusions

Taken together, our findings lead us to these conclusions:

1. Earthquake would change people’s just world belief. Those whose hometowns were located in the quake-hit area and those who had suffered the loss of their families or friends in the earthquake scored significantly lowly on the BJW scale.
2. Personal BJW is particularly important in predicting postquake psychological well-being.
3. BJW had a greater effect on woman participants and participants who had suffered the loss of their families or friends in the earthquake.
4. Feelings of uncertainty and future orientation partially mediated the relationship between BJW and psychological well-being (depression, anxiety, and hope).

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Note

1. Excerpted from our follow-up interview.

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