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Belief in a Just World When Encountering the 5/12 Wenchuan Earthquake

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Conceptual Framework (B-W)

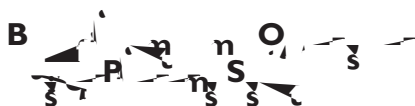
According to Lerner and Miller (1978) just world hypothesis, individuals have a need to believe that they live in a world where people generally get what they deserve and deserve what they get. The belief in a just world (BJW) enables the individual to confront his physical and social environment as 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 deroga-

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.

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, and to have tags



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



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 ($M = 20.31$, $SD = 0.94$), 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%).

Intervention

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

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 = _____ to 4 = _____. High scores correspond to higher levels of anxiety. The Cronbach's alpha for the measure in the current study was .84.

R 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 ($F(1, 115) = 11.5, p < .001$)

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 psycho-

T ₁ -2, 1		M		SD	1	2	3	4	5	6
1. 3	24.	3. 52								
2. 3	22. 5	3.53	-.302**							
3. 1 q	16. 4	2. 05	.505**	-.344**						
4. 1	1. 1	3. 25	-.10 *	.302**	-.230**					
5. 3 q	22.3	3.2	.231**	-.122**	.1 5**	-.066				
6. 3	11.	1.605	.20 **	-.122**	.21 **	-.114*	.440**			
7. 1	11.62	1. 33	.266**	-.12 **	.336**	-.1 **	.4 6**	.561**		
8. 1 q	3. 6	.515	-.22 **	.243**	-.314**	.266**	-.35 **	-.361**	-.4 4**	
9. 1	34.21	.	-.20 **	.25 **	-.304**	.2 6**	-.253**	-.2 2**	-.36 **	. 2 **

N = 4 4.

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

The Role Played in Participative Victim Group

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, $(1, 149) = 44.614, p = .000$, qualified by its interaction with gender, $(1, 149) = 7.959, p = .005$. However, the main effect of gender was not significant, $(1, 149) = 3.208, p = .075$. Furthermore, we found that in the low-BJW group, woman partici-

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.

Table 4. Descriptive Statistics and Correlations

	χ^2	df	χ^2/df	p	RMSEA	TLI	NFI	CFI
Model	6.0	2	3.0	0.05	0.0	0.9	0.9	0.9

N = 44.

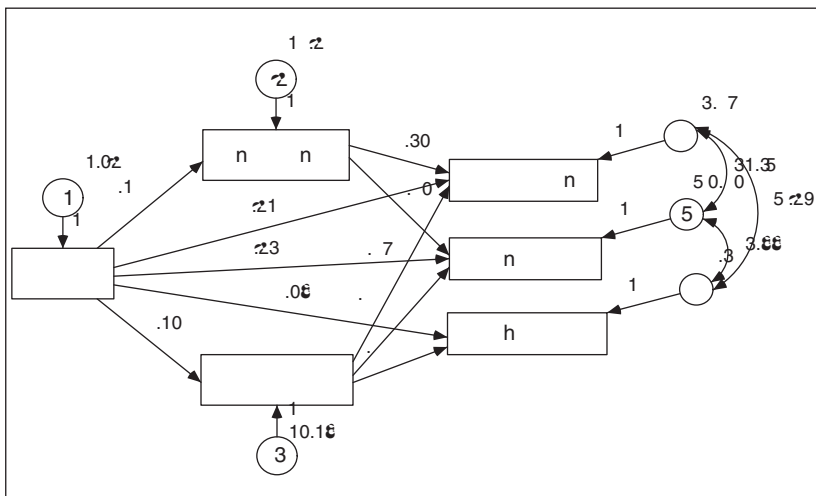


Figure 2. Path Diagram of the Structural Equation Model

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;

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 particular

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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Results

1. Excerpted from our follow-up interview.

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