Beliefs in a just world as buffer against anger

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Abstract

Anger is the emotion typically accompanying unfairness appraisals. Belief in a just world (BJW) should buffer against angry feelings because subjects high in BJW downplay the unfairness, justify the unfairness as being self-inflicted, and avoid self-focused rumination. In two experiments, an angry, happy or sad mood was induced. Subjects high in BJW were less angry (Experiment 1) and revealed no impaired self-esteem (Experiment 2) in the anger-evoking condition compared to subjects low in BJW who reported increased feelings of anger and a decreased self-esteem in the anger condition. Additionally, a questionnaire study revealed a negative relationship between BJW and anger-in. It is concluded that high believers more successfully cope with anger-evoking situations, and it is discussed that BJW can be seen as personal resource protecting not only mental, but physical health.

Key words: Just world beliefs; anger; anger expression style; self-esteem: mood induction
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According to Lerner’s (1965; Lerner & Simmons, 1967) just world hypothesis, people are motivated to believe in a just world where people generally get what they deserve and deserve what they get. This belief enables people to confront their physical and social environment as though it were stable and orderly (Lerner & Miller, 1978) and serves important adaptive functions. The strength of the belief in a just world (BJW) varies between individuals (Rubin & Peplau, 1973, 1975). The more people believe in a just world the higher the probability of justice-motivated reactions is.

Two Functions of the BJW

First, the belief in a just world endows individuals with the confidence that they will be treated fairly by others and will not fall victim to an unforeseeable disaster. Individuals high in BJW are able to place more trust in others (Zuckerman & Gerbasi, 1977), are less cynical about the prosocial behavior of others (Furnham, 1995), and reveal more dyadic trust in times of need (Dalbert & Braun, 1997). Overall, this trust in fairness has two consequences. First, people high in BJW are more likely to invest in their future because they are confident that their investments will be fairly rewarded. This includes goal-directed behavior such as investment in long-term goals (Hafer, 2000) and unspecific investments in times of need – for example, prosocial behavior with the aim of ensuring a good outcome for oneself when this is most needed (Zuckerman, 1975). Second, because they are confident that they will be treated fairly, individuals high in BJW feel less threatened and less distressed by the demands of others (Tomaka & Blascovich, 1994). In sum, BJW endows individuals with great trust
in the fairness of the world, which has several adaptive consequences. Individuals are therefore motivated to defend their BJW whenever it is threatened.

Being confronted with an injustice, either observed or experienced, threatens the belief that justice prevails in the world. Individuals high in BJW therefore try to restore justice either in reality or psychologically. Thus, as a second function, BJW provides a framework helping individuals to interpret the events of their personal life in a meaningful way. When individuals high in BJW experience unfairness, which cannot be resolved in reality, they usually try to assimilate this experience to their BJW. This can be done by justifying the observed or experienced unfairness as being at least partly self-inflicted (Comer & Laird, 1975; Karuza & Carey, 1984; Kiecolt-Glaser & Williams, 1987), by playing down the unfairness (Hafer & Correy, 1999; Montada, Schmitt, & Dalbert, 1986; Lipkus & Siegler, 1993), and by avoiding self-focused rumination (Dalbert, 1997). Consequently, studies with victims of unfairness as severe accident victims (Bulman & Wortman, 1977), rape victims (Libow & Doty, 1979), or subjects threatened by unintended job loss (Lerner & Somers, 1992) evidenced an adaptive relationship between BJW and well-being or self-esteem.

The studies exploring the relationship between belief in a just world and mental health were questionnaire studies with correlations as results. It is not possible to conclude a causal relationship from a correlation, however. Subjects in a good mood may think that the world is a just place, or individuals believing in a just world may feel better. Mental health may influence BJW or it may be the other way round, or even a third variable correlated with both, e.g., neuroticism, may have caused this relationship. All interpretations are compatible with a positive correlation. The aim of the following
studies was to test directly the hypothesis that BJW influences the individuals’ well-being and self-esteem. Therefore, an experimental approach was chosen in two of the three studies.

**BJW and anger**

BJW is seen as buffer helping the victims to better cope with the experienced unfairness. The most typical emotion for unfairness is anger. A strong relationship between fairness ratings and anger was shown by Smith and Ellsworth (1985). Within six dimensions describing the cognitive appraisal of emotions they observed that anger was the emotion most typical for low self-responsibility/low fairness appraisals, and sadness was the emotion most typical for high situation control. Reverse, Keltner, Ellsworth, and Edwards (1993) observed that fairness cognitions could be influenced by mood induction. In their experiments angry subjects rated a target person as more unfair as sad subjects. In a cross-cultural study in 37 countries Scherer (1997) evidenced that within seven emotions the unfairness rating was highest for anger and within anger the unfairness rating was the highest out of eight appraisals. Although the unfairness ratings varied between the geopolitical regions this was true for all regions including North and Central Europe and the USA. In sum, anger is the emotion most typical accompanying unfairness appraisals, and unfairness appraisals are most typical for anger.

It is assumed that BJW is a personal resource that enables individuals to cope successfully with unfairness and unfairness is most typically accompanied by anger. Thus, BJW should especially buffer individual mental health and well-being when confronted with an anger evoking situation, if it is unfair, which most of the time should be true. BJW’s adaptive effect on mental health in anger evoking situations can be
thought of as mediated by at least three reactions. (a) Subjects high in BJW should
doGwnplay the unfairness in an anger evoking situation and, thus, should feel better.
Dalbert (1996) confirmed that several female victim groups like blue-collar worker or
mother of a disabled child judged their own fate to be less unfair, the more they believed
in a just world. (b) Subjects high in BJW should justify the experienced unfairness as
being self-inflicted and, as a consequence, should be less angry. Hafer and Correy
(1999) demonstrated that students high in BJW are more likely to make internal
attributions and less likely to make external attributions of their own negative outcomes,
thus attenuating feelings of unfairness and, in turn, leading to a reduction in negative
emotions. (c) Subjects high in BJW should avoid self-focused rumination, which should
protect their mental health. Dalbert (1997) evidenced that unemployed workers high in
BJW are more likely to avoid the “why me?”-question, thus leading to a reduction of
depressive symptoms. Furthermore, Rusting and Nolen-Hoeksema (1998) identified
rumination as cause for increased anger. In sum, it was hypothesized that BJW works
particularly as buffer in anger situations leading to reduced anger and protecting the
subjects’ mental health.

**Anger expression style**

Anger alone or as part of the AHA-Syndrome (anger, hostility, aggression;
Johnson, 1990) or as part of the Type A-behavior (Dembrowski, McDougall, Williams,
Haney, & Blumenthal, 1985) is often discussed as cause of impaired health and
decreased well-being. However, health research suggested that the style of anger
expression compared to the amount of anger experienced is more important as health
predictor. Trait measures assessing individual differences in style of anger expression
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differentiate between anger-in, anger-out, and anger-control (Spielberger, 1988; Schwenkmezger, Hodapp, & Spielberger, 1992). Anger-in refers to individuals who frequently experience intense angry feelings, but tend to suppress these feelings.

Individuals high in anger-out frequently experience anger which is expressed with overt verbal (e.g., insults, sarcasm) or physical expressions (e.g., slamming doors, throwing objects). Anger-control is characterized by the attempt to constrain and control angry feelings. In sum, a low value on an anger-style scale describes individual who rarely experience anger which they express in a certain way, and a high value indicates individuals who frequently experience anger and express these feelings in a certain way.

For example, individuals low in anger-in tend to seldom experience feelings of anger and if, they do not suppress these feelings; and persons with a high value on the anger-in expression style scale tend to feel angry more often and if, they tend to suppress these feelings.

Health research shows that especially anger-in is associated with impaired health. The Detroit Study evidenced that anger-in is associated with higher blood pressure for adults (Gentry, Chesney, Gary, Hall, & Harburg, 1982), and the Tampa Study (Johnson, 1984, as cited in Johnson, 1990) additionally revealed that, in particular, anger-in predicted elevated blood pressure for adolescents. Schwenkmezger (1997) summarized several studies evidencing a positive relationship between anger-in and coronary heart disease. Moreover, Schwenkmezger et al. (1992) evidenced in several questionnaire studies that anger-in, but not anger-out or anger-control, was negatively correlated with mental health (questionnaire of Becker, 1989) and action-orientation (questionnaire of Kuhl, 1988), and positively correlated with social isolation (questionnaire of Jahnke,
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Erdmann, & Kallus, 1984). Finally, anger-in, but not anger-out or anger-control, was increased for four groups of patients (psychotic, neurotic, alcoholic, psychosomatic) compared to control subjects (Schwenkmezger et al., 1992).

Overall, the health literature clearly evidenced that anger and, particularly, anger-in is an important predictor of impaired health. Just world research has evidenced that subject high in BJW tend to minimize or justify unfairness and are less prone to ruminate. Thus, BJW should result in decreased feelings of anger. Notice, it is supposed that BJW in fact reduces angry feelings and that BJW does not lead to the suppression of anger. The less individuals feel anger and the more they are able to successfully deal with their anger, the lower their need should be to suppress their feelings of anger. Individuals high in BJW should be more capable of successfully coping with anger, thus they have no need to suppress their feelings of anger and consequently their tendency for anger-in should be low. Therefore, it was hypothesized that BJW should particularly decrease anger-in.

Personal versus general BJW

The more just world research concentrates on the mental health area, the more a differentiation between a general and a more personal belief in a just world becomes important. Lerner and Miller (1978) argued that general and personal belief should be differentiated and others have suggested this distinction as well (Furnham & Procter, 1989; Hafer & Olson, 1993). The more personal an experience of injustice is, the more threatening it is and the more it will be denied. Injustices and discriminations will be more strongly denied in one's own group than in other groups (Dalbert & Yamauchi, 1994), one's own discrimination will be more strongly denied than discrimination of
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one's group (Taylor et al., 1990), and one's own superior fairness will be emphasized (Farwell & Weiner, 1996; Messick et al., 1985). Consequently, the belief in a just world in general and the belief in one's own fate as just should be differentiated as well. The personal BJW depicts the belief that, overall, events in one’s life are fair, compared to the general BJW that, basically, the world is a just place. The personal belief in a just world compared to the general belief in a just world should endow subjects with more trust in being treated fairly by others, because it directly depicts the trust to be treated fairly in one's own life. Thus, the personal compared to the general BJW should be more important in predicting mental health. Lipkus, Dalbert and Siegler (1996) and Dalbert (1999) evidenced that a personal BJW could successfully be differentiated from a general BJW, and that the personal BJW was more important in predicting psychological well-being. Overall, the personal compared to the general BJW is more personally relevant and, thus, the need to defend this belief increases. Therefore, personal compared to general BJW should also be more important in predicting coping with unfairness. Therefore, it was hypothesized that the personal compared to the general BJW should be more important as buffer against anger.

**Overview of the Current Research**

In the following section three studies will be described, each testing the assumed adaptive relationship between BJW and anger. The first one was a questionnaire study describing the relationship between BJWs and style of anger expression. Afterwards, the results of two experiments are presented. Both were aimed at testing the BJWs’ buffering effect. Subjects were primed to think of an anger-evoking situation which
presumably was an unfair situation. It was tested whether subjects high in BJW showed less anger and better protected their mental health.

STUDY 1

In this study, the relationship between BJWs and styles of anger expression was investigated. On the basis of just world theory it was argued that BJW and, in particular, personal BJW, should result in decreased feelings of anger and, moreover, high just world believers should be able to better deal with their anger feelings because they have several options at hand which can successfully decrease feelings of anger like e.g. minimizing or justifying the unfairness. If the BJW in fact reduces angry feelings and increases a successful way of dealing with it, BJW should not simply lead to the suppression of anger. Instead, BJW should particularly decrease anger-in. Thus, it was expected that (a) BJW should be negatively correlated with anger-in and (b) that this relationship should be stronger for personal compared to general BJW.

Method

Subjects. 143 (67 male and 76 female) students took part in the study. The age varied between 19 and 40 years ($M = 22.6; SD = 3.2$).

Questionnaires: BJWs were assessed with the justice questionnaire comprising the six items of the General Belief in a Just World Scale (Dalbert et al., 1987; $\alpha = .78$; item e.g.: "I think basically the world is a just place") and the seven items of the Personal Belief in a Just World Scale (Dalbert, 1999; $\alpha = .86$; item e.g.: "Overall, events in my life are just") in random order. The items were rated on a 6-point Likert scale with endpoints "totally disagree" (1) and "totally agree" (6). The unweighted scale means were used as scale values for all scales with high values indicating a strong construct. Styles of anger
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expression were measured with the scales from the State-Trait Anger Expression Inventory (Spielberger, 1988; German version: Schwenkmezger et al., 1992). The inventory contains three 8-item scales capturing individual differences in anger-in (e.g., "I could explode, but I do not let anybody notice"), anger-out ("I lose my composure"), and anger control ("I control my anger"). Items are answered on a 4-point scale from "almost never" (1) to "almost always" (4). With Cronbach’s alphas of .84 (anger-in), .89 (anger-out), and .84 (anger control), all scales showed high reliability.

**Procedure:** The study was done anonymously as part of a larger questionnaire study.

**Results**

The intercorrelations between the BJWs and the three anger expression styles are given in Table 1. Just world beliefs and anger-in did not differ between men and women.

Women showed a stronger tendency for anger-out and a lower probability for anger-control, however. BJW correlated negatively with anger-in, and this relationship was slightly stronger with personal BJW than with general BJW ($z = -1.63; p = .052, 1$-tailed; Meng, Rosenthal, & Rubin, 1992). The more the subjects endorsed in particular the personal BJW the less they tend to suppress their anger. The relationship between anger-out and personal BJW was only marginally significant. The more the subjects were convinced that events in their life were just the less they tend to express their angry feelings by overt behavior. BJW correlated positively with anger-control, and this relationship was stronger with general BJW than with personal BJW ($z = 1.94; p = .026, 1$-tailed; Meng et al., 1992). The more subjects believed in a generally just world, the more they attempt to constrain and control angry feelings.
The correlation pattern evidenced that subjects high particularly in personal BJW were more successful in adaptively coping with angry feelings. The more the individuals were convinced that they usually get what they deserve, the less frequently they experience intense feeling of anger and if they feel anger they do not tend to suppress these feelings or to articulate them by overt verbal or physical expressions. However, the more subjects were convinced that the world in general is a just place, the more they tend to control their angry feelings. These findings give support to the notion that especially the personal compared to the general BJW can reduce feeling of anger and prevent anger-in. Health research clearly evidenced that anger and especially the tendency to suppress these feelings, the anger expression style anger-in, are important predictors of impaired health as e.g. elevated blood pressure and coronary heart disease. The results of this questionnaire study evidenced that particularly personal BJW can be seen as a health-protective personal resource that is accompanied by a low tendency of anger-in and, thus, should lead to increased health.

STUDY 2

The Study 1 provide first evidence that the belief in a personal just world in fact reduces anger and does not just lead to anger suppression as measured with the anger-expression style anger-in. However, it was a questionnaire study, and a causal relationship cannot be concluded from a correlation. Thus, the adaptive relationship between BJW and anger should be further investigated by an experimental approach.

In two experiments, the buffering effect of the BJWs was tested by evoking a sad, a happy or an angry mood, respectively. It was hypothesized that BJWs should have an anger-specific buffering effect. (a) In the anger evoking condition anger should be
increased and mental health should be impaired for individuals low in BJW only. Well-being of subjects in the anger condition should be better the more they believe in a just world. (b) BJW’s buffering effect should be observed only in the anger condition but not in the other conditions. (c) The buffering effect was expected to be stronger for the personal compared to the general BJW.

These hypotheses were tested in two experiments. Study 3 was an exact replication of Study 2, only the dependent measures were different. The first experiment was aimed at directly testing the just world – anger- relationship. Thus, anger mood was chosen as dependent variable.

Method

Subjects: Subjects of each experiment came from different West German universities or colleges. None had Psychology as major, but most of them were enrolled in introductory psychology courses. 147 (69 male and 78 female) students took part in Study 2. The age varied between 18 and 65 years (M = 25.1; SD = 6.3).

Procedure: The study was done anonymously in group sessions. The subjects were confronted with the experimental manipulation (mood induction) in form of a written instruction in their experimental booklet. Subsequently, they completed the beliefs in a just world questionnaire that consists of the two just world scales' items in random order. After a filler questionnaire, self-report measures of the dependent variable were answered. Thus, the dependent variable was measured about 10 minutes after the experimental manipulation.

The three experimental conditions (sadness, anger, happiness) and the control condition were distributed by random. Subjects were told that the first part of the session
consists of a diary study with the aim to gather situation descriptions, which are needed as material for another study. Then, subjects in the experimental conditions were asked to describe a situation, in which they felt sad (or angry, or happy). Following a procedure introduced by Strack et al. (1985) subjects were asked to give a detailed description and to describe exactly how they felt and not why it occurred. Subjects in the control condition were asked to give a list of their daily activities. All subjects were given 10 minutes to finish this task. The anger condition was thought of priming the confrontation with the experience of unfairness. Thirty-six subjects were asked to describe a situation, in which they felt sad, 38 subjects gave an example for anger, 34 subjects participated in the happiness condition, and the control condition consists of 39 subjects.

**Dependent variables.** After completing the first task subjects were asked to participate in a questionnaire study. They first answered the justice questionnaire comprising the six items of the General Belief in a Just World Scale (Dalbert et al., 1987; $\alpha = .60$; item e.g.: "I think basically the world is a just place") and the seven items of the Personal Belief in a Just World Scale (Dalbert, 1999; $\alpha = .79$; item e.g.: "Overall, events in my life are just") in random order. Afterwards, a 15 item scale not describing a justice or mental health dimension was distributed, this scale will not be discussed in this paper. All items were rated on a 6-point Likert scale with endpoints "totally disagree" (1) and "totally agree" (6). Finally, the Actual Mood Scale (Dalbert, 1992a) asking subjects for their present mood state was provided with three items measuring sadness ($\alpha = .89$), three items describing anger ($\alpha = .82$), and six items depicting positive mood ($\alpha = .94$). Each item was to be rated on 7-point Likert-type scales ranging from "not" (1) to "very
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The unweighted scale means were used as scale values with high values indicating a strong construct.

Results

Mean differences. Table 2 presents the mean ratings for the five scales across the four conditions. One-way ANOVAs, with condition (sadness vs. anger vs. happiness vs. control) as between-subjects factor, were done separately for each dependent variable. No significant main effects were observed (general BJW: $F(3, 142) = 2.495, p = .062$; personal BJW: $F(3, 142) = .537, p = .658$; anger: $F(3, 142) = 1.358, p = .258$; sadness: $F(3, 143) = .613, p = .608$; happiness: $F(3, 142) = .268, p = .848$). However, planned comparisons revealed that feelings of anger were significantly higher in the anger condition ($M = 1.96; SD = 1.23$) compared to the other three conditions ($M = 1.60; SD = .92; df = 52.47; t = -1.65; p = .053$ one-tailed). Comparable tests for sadness and happiness did not reveal significant differences ($ps > .30$).

Intercorrelations. Both BJW scales correlated significantly to $r = .39$. Out of the 24 correlations between both BJW scales and the 3 mood scales within the four experimental conditions 7 correlations were significant. These were as expected the correlations between BJWs and feelings of anger in the anger condition (general BJW: $r = -.50, p = .001$; personal BJW: $r = -.40, p = .014$); the more the subjects endorsed the BJWs the less they felt anger in the anger evoking condition. In addition, both BJWs correlated with positive mood within the sadness condition (general BJW: $r = .34, p = .039$; personal BJW: $r = .44, p = .007$), and personal BJW correlated with anger within the happiness condition ($r = -.41, p = .017$) and with a sad mood ($r = -.32, p = .045$) and a positive mood ($r = .42, p = .008$) within the control condition. It should be kept in
mind that moods were measured as the actual mood experienced at the end of the experiment about 10 minutes after the experimental condition was finished. The anger measure does not depict the amount of anger experienced while describing the anger-evoking situation. Thus, the negative relationship between BJW and anger does not necessarily mean that individuals high in BJW experienced less anger at all. This negative relationship depicts that persons high in BJW may have experienced less anger right at the beginning or that they were able to reduce their feelings of anger successfully.

The hypothesis that the relationships between angry mood and BJWs were stronger in the anger compared to the other three conditions was tested with moderated regression. The experimental conditions were depicted by three dummy variables, each with 1 for a specific mood induction, and the overall zero indicated the control condition. Multiple regression analyses were done for each BJW separately with dummy variables for the experimental conditions entered in the first step, BJW in the second step and the three product terms of the just world belief with the dummy variables for the experimental conditions in the third step. Insignificant product terms and, afterwards, dummy variables which were neither significant nor part of an interaction term were removed from the regression equation. Moreover, in order to test the specificity of the observed effects, the comparable analyses were run for sadness and positive mood. Results are depicted in Table 3.

Neither for sad mood nor for positive mood as criteria the BJWs' main effects or its interaction effects were significant. For angry mood the expected interaction of the anger condition with general BJW was significant. The interaction of general BJW and
the anger condition explained 8% of the angry mood’s variance in addition to the 2% already explained by the anger condition itself. The result pattern reveals that general BJW affected in particularly feelings of anger (compared to sadness or positive mood) and that this effect significantly differed in the anger condition compared to the other three conditions which can be collapsed.

The regression equation (see Table 3) shows that general BJW negatively affected the feelings of anger in the anger condition only (anger condition given: \( b = (.02 \times BJW - 1.08 \times 1)BJW; b = -1.06 \times BJW \)); in the other three conditions BJW showed no effect on the feelings of anger (anger condition not given: \( b = (.02 - 1.08 \times 0)BJW = .02BJW \)). When confronted with a potentially anger evoking situation, subjects felt less anger the more they believed in a general just world. In order to further clarify how this interaction exactly works, values for the general BJW (\( M \pm SD \)) were inserted in the regression equations for the anger as well as for the non-anger condition. For those not believing in a general just world (\( M - SD \)) the anger conditions resulted in heightened feelings of anger (anger\_expected\_value = 2.6). In contrast, those strong in general BJW (\( M + SD \)) felt virtually no anger even when remembering a potentially anger arousing situation (anger\_expected\_value = 1.1; 1 means "no anger"). In all other conditions, feelings of anger were independent of the subjects’ general belief in a just world (anger\_expected\_value = 1.6). Or to state it otherwise, only for those low in general BJW the anger condition resulted in heightened feelings of anger compared either to high just world believers in the anger condition or to subjects in the other conditions.

In the comparable moderated regression analyses with personal BJW for sad mood as criteria neither the personal belief in a just world’s main effect nor its
interaction effects were significant, and for positive mood only the personal BJW’s main
effect was significant. The more the subjects endorsed the personal BJW the stronger
their positive mood was, and this was equally true within all experimental conditions.

For angry mood as criteria the hypothesized interaction term of personal BJW
and anger condition failed the significance criteria ($p = .119$), although the interaction
term works in the same direction as observed for the general BJW (anger condition
given: $b = -.70$; anger condition not given: $b = -.28$). The more the individuals endorsed
the personal BJW, the less they were angry; and this adaptive relationship was stronger
when actually confronted with a potentially anger arousing event. When values for the
personal ($M \pm SD$) were inserted in the regression equations for the anger as well as for
the non-anger conditions, it was revealed that for weak personal just world believers the
anger evoking condition significantly increased the feelings of anger (anger$_{expected\ value} = 2.4$) compared to subjects high in personal BJW (anger$_{expected\ value} = 1.4$) or compared to
subjects in the other conditions whose anger mood slightly varied in dependence of their
personal BJW (anger$_{expected\ value} = 1.4$ to 1.8).

Discussion

Besides an overall adaptive relationship between personal BJW and positive
mood the expected anger-specific buffering effect was observed. Only for individuals
who did not endorse the BJW, the anger-evoking experimental condition resulted in
increased feelings of anger. Participants who did not believe in a just world, revealed
increased feelings of anger in the anger condition compared to high just world believers
who did not differ in their anger feelings compared to all subjects in the other three
conditions. The result pattern clearly underlines the expected buffering effect of BJW. If
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need be--here the anger evoking experimental condition--a high belief in a just world protected the individuals' well-being and prevent from feelings of anger.

This result pattern was observed for the general and also for the personal BJW. However, for the personal BJW the interaction effect did not reach significance. The interaction effect may have failed the significance level, because the personal BJW generally decreased anger, independent of whether the subjects were actually confronted with an anger threat or not. This main effect already explained 7% of the variance in addition to the anger condition’s main effect explaining 2%. Overall, in addition to the anger condition's main effect both beliefs in a just world explain a comparable amount of variance in the anger criteria (9%); the general BJW did it mainly by its interaction effect (8%), and the personal BJW did it largely by its main effect.

STUDY 3

Study 2 aimed to substantiate the BJW's buffering effect on anger that when confronted with an anger-evoking situation high just world believers were protected against heightened feelings of anger. However, Study 2 revealed differences between both just world beliefs with the general BJW particularly exposing an anger specific buffering effect and with personal BJW showing a more general adaptive effect. This difference between general and personal BJW may be due to random or it may be a systematic difference. This cannot yet be decided by the results of only one study. Therefore, Study 3 aimed to clarify this point. An additional target of Study 3 was the expansion of the buffering effect. It should be tested whether the BJWs can buffer the subjects' mental health in an anger-evoking situation in a broader sense. Individuals high in BJW should avoid to self-focused rumination and should minimize the experienced
unfairness, which should in turn protect their self-esteem and well-being. Moreover, they may justify the experienced unfairness as at least partly self-inflicted by their own behavior, which may help to regain control over their live and, thus, should lead to a better mental health state.

As a consequence, Study 3 was done as an exact replication of the Study 2 with one exception. A broader indicator of mental health was applied as dependent measure. As mental health indicator self-esteem was measured. BJWs and self-esteem were only slightly or non-significantly correlated in other studies (Dalbert, 1993a, 1996), and sometimes self-esteem showed a stronger relationship with personal compared to general BJW (Dalbert, 1999). This mixed result pattern may be observed because these studies did not clearly differentiate between subjects actually threatened by unfairness or not.

Study 3 aimed at replicating the BJW's buffering effect with self-esteem as dependent variable. It was hypothesized that (a) BJW and self-esteem should be positively and (b) more strongly correlated in the anger evoking condition than in the other conditions, because anger should be associated with unfairness which should be more easily be coped with by subjects high in BJW; and that (c) these should be true for both BJWs.

Method

Subjects: 154 (29 male and 124 female) students took part in the experiment. The age varied between 18 and 51 years ($M = 24.8; SD = 4.9$).
Procedure: The procedure exactly replicated Study 2. Thirty-six subjects were asked to describe a situation, in which they felt sad, 42 subjects gave an example for anger, 38 subjects participated in the happiness condition, and the control condition consists of 38 subjects.

Dependent variables: After completing the first task subjects were asked to participate in a questionnaire study in which they first answered the justice questionnaire comprising the six items of the General Belief in a Just World Scale (Dalbert et al., 1987; $\alpha = .69$; item e.g.: „I think basically the world is a just place“) and the seven items of the Personal Belief in a Just World Scale (Dalbert, 1998; $\alpha = .86$; item e.g.: „Overall, events in my life are just“) in random order. Afterwards, a 15 item scale not describing a justice or mental health dimension was distributed, this scale will not be discussed in this paper. Finally, the self-esteem scale of the Frankfurt Self Concept Scales (Deusinger, 1986) consisting of ten items which are comparable to the items of Rosenberg’s Self-Esteem Scale (1965) was distributed ($\alpha = .89$). All items were rated on a 6-point Likert scale with endpoints "totally disagree" (1) and "totally agree" (6). The unweighted scale means were used as scale values with high values indicating a strong construct.

Results

Mean differences. Table 2 presents the mean ratings for the three scales across the four conditions. One-way ANOVAs, with condition (sadness; anger; happiness; control) as between-subjects factor, were done separately for each dependent variable. No significant main effects were observed (general belief: $F (3,148) = 2.283, p = .081$; personal belief: $F (3,147) = 2.515, p = .061$; self-esteem, $F (3,147) = .840, p = .474$).
Intercorrelations. Both just world scales significantly correlated to $r = .45$. Out of the eight correlations between both just world beliefs and self-esteem within the four experimental conditions three correlations were significant. As expected both BJWs and self-esteem were significantly correlated within the anger condition (general belief: $r = .34$, $p = .032$; personal belief: $r = .62$, $p < .001$). When confronted with a potentially anger evoking situation, BJW buffered the individuals’ self-esteem; the more the subjects believed in a general or personal just world, the stronger their self-esteem was. Additionally, personal but not general BJW significantly correlated with self-esteem in the sadness condition (personal belief: $r = .48$, $p = .004$). When confronted with a sadness arousing event, subjects high in personal BJW showed a stronger self-esteem.

Moderated regression analyses were done in the same way as described in Study 2 to test whether the relationships between self-esteem and both BJWs were significantly stronger in the anger compared to the other three experimental conditions. For general BJW the expected interaction with the anger condition was significant and explained 4% of the self-esteem’s variance (see Table 3). The regression equation reveals that general BJW only affected the subjects’ self-esteem in the anger condition. Under the experimental condition of induced anger ($b = .47$BJW) self-esteem was higher the more the subjects believed in a general just world. In the other conditions self-esteem was independent of the subjects’ general BJW ($b = -.04$). To further clarify the interaction’s meaning, values for the general BJW ($M \pm SD$) were inserted in the regression equations for the anger as well as for the non-anger condition. The anger-evoking condition impaired self-esteem for subjects with low general BJW (self-esteem expected value $= 4.3$) compared to individuals with a strong general BJW (self-
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expected value = 5.0) or compared to all participants in the other conditions (self-esteem
expected value = 4.8). Overall, this result pattern again undoubtedly evidenced that
general BJW served as buffer in an anger evoking condition and protected the subjects’
self-esteem.

In the moderated regression with personal BJW (see Table 3) two interaction
terms were significant—those with the dummy variables for the sadness and the anger
condition. The interaction of personal BJW with the sadness condition explained 6%
variance in addition to the 13% variance already explained by the personal BJW’s main
effect; finally, the interaction of personal belief with the anger condition explained 5%
of the variance. The regression equation reveals that personal BJW more strongly
affected subjects’ self-esteem in the sadness condition ($b = .86$) and in the anger
condition ($b = .57$) than in the other conditions ($b = .09$). Values for the personal BJW
($M \pm SD$) were inserted in the regression equations for the sadness, the anger as well as
for the other conditions. For those subjects not believing in a personal just world the
sadness (self-esteemexpected value = 4.0) as well as the anger condition (self-esteemexpected
value = 4.2) clearly diminished their self-esteem compared to subjects high in personal
BJW (self-esteemexpected value = 5.4 or 5.2, respectively) or compared to all subjects in the
other conditions (self-esteemexpected value varied between 4.8 and 4.9).

Discussion

When confronted with an anger evoking experimental condition BJW served as
buffer and protected the individuals’ self-esteem. The more the individuals believed in
just worlds the less their self-esteem decreased when under an anger threat. Moreover, in
Study 3 this interaction effect between anger condition and BJW was significant for
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general and also for personal BJW. In addition, in this experiment these interaction
effects explained about an equal amount of variance (4% or 5% respectively).

However, the personal compared to the general BJW’s effect again seemed to be
broader. As in Study 2, personal but not general BJW revealed a strong main effect on
anger meaning that all subjects independent of their experimental condition felt less
anger the more they believed in a personally just world. Moreover, for personal BJW a
buffering effect was evidenced not only for the anger but also for the sadness condition.
The more the subjects believed in a personal just world, the less they were angry in a
sadness arousing situation. This effect of personal BJW in the sadness condition was
unexpected and it can only be speculated why this occur. Subjects in the sadness
condition often reported a loss experience, e.g. a break-up of a romantic relationship. In
such situations sadness can easily be mixed up with anger. This may explain why
personal BJW seems to work as buffer in the sadness-arousing situation. Overall, the
personal compared to the general BJW’s effect on self-esteem was stronger.

GENERAL DISCUSSION

The results of all three studies undoubtedly support the hypothesis that the belief
in a just world works as buffer against feelings of anger. In a potentially anger-evoking
situation, individuals high in BJW were prevented from increased feelings of anger and
declined self-esteem. Ten minutes after the confrontation with the anger-evoking
condition, those individuals virtually did not differ in their feelings from the individuals
in the control condition. On the contrary, individuals with a low BJW were significantly
affected by the anger-evoking experimental condition. They revealed grown feelings of
anger and impaired self-esteem compared to the control subjects.
The personal compared to the general BJW was expected to be more important in being a buffer against anger. In both experiments, the expected interaction effect of general BJW and anger condition was significant, and general BJW served as buffer against feelings of anger. However, Study 1 evidenced that general BJW was positively correlated with anger-control. Individuals high in general BJW may often experience anger, but they tend to control these feelings. Thus, the diminutive feelings of anger at the end of the experiment may be interpreted for those people as a result of such an anger-control process.

The personal BJW’s interaction effect was significant in Study 3, but failed the significance level in Study 2. However, in both experiments the personal BJW worked in the expected direction. Individuals who endorsed the personal BJW were less affected by the anger-evoking condition than individuals with a weak personal BJW. Anger mood increased and self-esteem were decreased only for people who did not believe in a personal just world. In addition, Study 1 evidenced that a high personal BJW is accompanied by less frequent experiences of anger and, if experiencing anger, those individuals did not tend to either suppress or to act out these feelings. These results support the interpretation that for individuals high in personal BJW the small feelings of anger at the end of the experiment may be interpreted as expression of lesser experience of anger instead of controlling them.

Furthermore, the BJWs' effects were expected to be anger-specific, and it turned out that the general BJW's effects were more specific than the personal BJWs effects. The personal BJW's effect were more global than the general BJW's effects in three ways. (a) In both experiments, only personal but not general BJW revealed a substantial
main effect on anger or self-esteem, respectively, indicating that individuals high in
personal BJW tend to overall experience less anger and to reveal a better self-esteem. (b)
Only personal BJW revealed an unexpected interaction effect with the sadness condition
indicating that personal BJW buffers against the feelings of anger in the sadness
condition also. see Mikula in PSPB (c) Furthermore, only personal BJW revealed a main
effect on positive mood in Study 2.

In sum, the personal BJW's effects seems to be different and more far-reaching
compared to the general BJW's effects. The personal BJW seems to protect the
individuals from feelings of anger and decline of self-esteem in all, but not only anger-
specific situations, and as doing this personal BJW's effects were more global.
Moreover, personal BJW seems to be able to reduce the feelings and also the
suppression of anger, whereas the general BJW may result in the control of the
expression of anger. These difference may lead to the interpretation that personal BJW's
buffering effect against anger is mediated by more healthy means. Thus, I would like to
overall conclude that the personal BJW's buffering effect is different and more in line in
with the theory than the global BJW' effect, because the personal BJW seems more
clearly to prevent feelings of anger. explain

The results clearly evidence that BJWs buffer against feelings of anger.
Furthermore, the result pattern gives support to different functions of the personal
compared to the general BJW. However, whether the BJWs' effect are anger-specific--
meaning that BJWs are especially potent to reduces feelings of anger compared to other
negative emotions like e.g. sadness--is not is not yet finally answered. On first view, the
results seem to support these notion. But this impression may be caused by problems
with the sadness condition. The experimental manipulation was very successful in revealing heightened feelings of anger. Although it was expected and turned out, that high just world believers should feel less angry, the experimental condition was successful in that it resulted in increased anger in the anger-condition compared to the other three conditions. However, comparable results were in particular not observed for a sad mood in the sadness condition. The results showed that the BJWs' effect were anger-specific in that they prevent from being angry but not from feeling sad. But this may be simply a consequence of a weak manipulation in the sadness condition. Further studies comparing anger-evoking and sadness inducing situations are needed to clarify this point.

These studies were the first to explicitly test the relationship between BJW and anger. The aim of the research was to investigate BJWs as buffer against anger. It was evidenced that high believers compared to low believers were less angry and showed no impairment of their self-esteem when confronted with an anger-arousing stimuli. It was supposed that this adaptive relationship is caused because the high believers feel less angry and they better cope with such a situation. They tend to downplay the unfairness, to justify the unfairness as being self-inflicted which may help to regain control and to avoid self-focused rumination. This all together may help to protect the subjects' self-esteem. The negative correlation between personal BJW and anger-in give support to the notion that high compared to low believers in fact feel angry more seldom and if, they seems not to simply suppress their feelings. If the latter case would be true, an positive relationship between personal BJW and anger-in should be observed.

CONCLUSION
Overall, our result pattern support interpretations which claim beliefs in a just world as cause of behavior and emotions in justice-related situations. Especially important seems the beliefs’ function as buffer against anger-induced stress which should be further examined. Particularly, the belief that events in one's life are just seems to prevent feelings of anger and to help the individuals to better cope with it. Anger and especially anger-in are discussed as important causes for elevated blood pressure and coronary heart disease. Other diseases as cancer or head ache may be influenced by feelings of anger as well (Adler & Matthews, 1994; Schwenkmezger, 1997). Therefore, BJWs and especially personal BJW may be an important personality factor explaining not only mental but also physical health. Further investigating this functions of the beliefs in a just world should be a challenge for the future.
REFERENCES


Dalbert, C. (1999). The world is more just for me than generally: About the Personal Belief in a Just World Scale’s validity. Social Justice Research,


Author Note

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Footnote

Female compared to male subjects reported significantly more feelings of anger ($p = .053$). But in the ANOVAs with feelings of anger as criteria the interaction of gender and experimental condition was not significant ($p = .185$), and in the moderated regression analyses with feelings of anger as criteria the interaction effects of anger condition and beliefs in a just world (see Table 2) did not substantially change when gender was included. Therefore, results related to subjects’ gender are not reported in more detail.
Table 1

Correlations between beliefs in a just world (BJW) and anger expression styles (N = 143)

<table>
<thead>
<tr>
<th></th>
<th>Personal BJW</th>
<th>General BJW</th>
<th>Anger-in</th>
<th>Anger-out</th>
<th>Anger-control</th>
</tr>
</thead>
<tbody>
<tr>
<td>General BJW</td>
<td>.29***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger-in</td>
<td>-.26**</td>
<td>-.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger-out</td>
<td>-.14†</td>
<td>-.04</td>
<td>-.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger-control</td>
<td>.07</td>
<td>.27**</td>
<td>.11</td>
<td>-.63***</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.04</td>
<td>-.08</td>
<td>.02</td>
<td>.24**</td>
<td>-.19*</td>
</tr>
</tbody>
</table>

Note. For gender 1 means ‘female’ and 0 means ‘male’. + means p < .10; * means p < .05; ** means p < .01; *** means p < .001.
Table 2

Means and standard deviations for general and personal belief in a just world, self-esteem, sadness, anger, and positive mood across four experimental conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>n</th>
<th>general belief in a just world</th>
<th>personal belief in a just world</th>
<th>self-esteem</th>
<th>sadness</th>
<th>anger</th>
<th>positive mood</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Study 2:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sadness</td>
<td>36</td>
<td>2.70</td>
<td>.71</td>
<td>4.37</td>
<td>.67</td>
<td>2.37</td>
<td>1.19</td>
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<td>Anger</td>
<td>38</td>
<td>2.75</td>
<td>.58</td>
<td>4.28</td>
<td>.70</td>
<td>2.66</td>
<td>1.60</td>
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<tr>
<td>Happiness</td>
<td>33</td>
<td>3.13</td>
<td>.75</td>
<td>4.37</td>
<td>.74</td>
<td>2.26</td>
<td>1.47</td>
</tr>
<tr>
<td>Control</td>
<td>39</td>
<td>2.93</td>
<td>.83</td>
<td>4.48</td>
<td>.66</td>
<td>2.27</td>
<td>1.51</td>
</tr>
<tr>
<td>Study 3:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sadness</td>
<td>35</td>
<td>2.54</td>
<td>.78</td>
<td>3.94</td>
<td>.65</td>
<td>4.61</td>
<td>.92</td>
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<tr>
<td>Anger</td>
<td>40</td>
<td>2.80</td>
<td>.69</td>
<td>4.14</td>
<td>.86</td>
<td>4.78</td>
<td>.83</td>
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<td>Happiness</td>
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<td>2.37</td>
<td>.68</td>
<td>3.76</td>
<td>.90</td>
<td>4.79</td>
<td>.76</td>
</tr>
<tr>
<td>Control</td>
<td>38</td>
<td>2.59</td>
<td>.80</td>
<td>4.23</td>
<td>.81</td>
<td>4.90</td>
<td>.52</td>
</tr>
</tbody>
</table>
Table 3

Regression of anger (Study 2) or self-esteem (Study 3) on general or personal belief in a just world, respectively, the experimental conditions (dichotomized), and their interactions (moderated multiple regression; accepted models, p < .05)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>R</th>
<th>R^2-change</th>
<th>b</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Study 2:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger (F_{total} = 6.193; df = 3/142; p &lt; .001)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger condition</td>
<td>.16</td>
<td>.02^+</td>
<td>3.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General belief in a just world</td>
<td>.19</td>
<td>.01</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger X general belief</td>
<td>.34</td>
<td>.08***</td>
<td>-1.08</td>
<td>-3.580</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
<td>1.54</td>
<td></td>
</tr>
<tr>
<td>Anger (F_{total} = 5.781; df = 3/142; p &lt; .001)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger condition</td>
<td>.16</td>
<td>.02^+</td>
<td>2.12</td>
<td></td>
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</tr>
<tr>
<td>Personal belief in a just world</td>
<td>.31</td>
<td>.07**</td>
<td>-.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger X personal belief</td>
<td>.33</td>
<td>.02</td>
<td>-.42</td>
<td>-1.569</td>
<td>.119</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
<td>2.84</td>
<td></td>
</tr>
<tr>
<td><strong>Study 3:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-esteem (F_{total} = 2.443; df = 3/145; p &lt; .066)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger condition</td>
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<td>.00</td>
<td>-1.41</td>
<td></td>
<td></td>
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<tr>
<td>General belief in a just world</td>
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<td>.01</td>
<td>-.04</td>
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<tr>
<td>Anger X general belief</td>
<td>.22</td>
<td>.04*</td>
<td>.51</td>
<td>2.547</td>
<td>.012</td>
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<td>(Constant)</td>
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<td>4.88</td>
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<td>Self-esteem (F_{total} = 9.868; df = 5/142; p &lt; .001)</td>
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<td>Sadness condition</td>
<td>.12</td>
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<td>Anger condition</td>
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<td>.09</td>
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<tr>
<td>Sadness X personal belief</td>
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<td>.06**</td>
<td>.77</td>
<td>3.860</td>
<td>&lt; .001</td>
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<tr>
<td>Anger X personal belief</td>
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<td>.05**</td>
<td>.48</td>
<td>3.215</td>
<td>.002</td>
</tr>
<tr>
<td>(Constant)</td>
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<td></td>
<td></td>
<td>4.49</td>
<td></td>
</tr>
</tbody>
</table>

Note. For conditions 1 means ‘condition given’ and 0 means ‘condition not given’. + means p < .10; * means p < .05; ** means p < .01; *** means p < .001.