



Belief in a just world as moderator of hostile attributional bias

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To determine the protective effect of 'belief in a just world for self' (BJW-S) on hostile attributional bias, 379 adolescents aged 10–16 years, previously identified by teacher ratings as high or low troublemakers, were presented with a hypothetical frustrating situation where the intent of the frustrating agent appeared either benign, hostile, or ambiguous. The analysis indicated that the higher the BJW-S, the lower participants reacted aggressively. This effect was qualified by 'belief in a just world for others' (BJW-O), indicating that the negative relationship between BJW-S and aggressive reaction was weaker as BJW-O increased. An interaction between BJW-S, troublemaking level, and the intent factor, indicated for high troublemakers in the ambiguous condition that an increase in BJW-S decreased aggressive reaction, while this was not the case for low troublemakers, thus providing support for the hypothesized buffer effect of BJW-S.

Recent research on individual differences in aggressive behaviour underlines the distinction between two sources of behaviour: latent knowledge structure, such as individual normative beliefs about the social appropriateness of aggression (Huesmann & Guerra, 1997), and social information processing, referring to mental mechanisms, such as attribution of intention to a frustrating agent (Dodge, 1980; Dodge & Frame, 1982; Dodge, Bates, & Pettit, 1990; Dodge, Pettit, McClaskey, & Brown, 1986).

Following a general model of social behaviour, which emphasizes how enduring knowledge structures shape processing of social information in discrete situations, as developed by Higgins (1996) and Mischel and Shoda (1995), our goal was to examine the protective affect of one kind of knowledge structure, namely 'just world beliefs' (Lerner, 1980; Dalbert, 2001) on hostile attributional bias and aggressive reactions. In a contribution devoted to cognitive mediators of aggression in adolescent offenders, Slaby and Guerra (1988) speculated that violent juvenile offenders have a weak 'belief in a just world' (BJW). In the present study, we aimed at showing that among at-risk youth, a high

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level on BJW for self (BJW-S) would constitute a protective factor against aggressive reactions following a frustrating situation.

Social information processing and hostile attributional bias

Several studies have demonstrated that aggressive children are more likely than others to interpret social cues with hostility, which then increases the probability of aggressive retaliation. In one typical study, Dodge (1980) showed that in reaction to an ambiguously intended frustrating event (destruction of a puzzle by a peer), aggressive boys (selected by peer nomination and teacher ratings) reacted as if the peer instigator had malevolently intended the act, whereas non-aggressive boys responded as if the peer had acted benignly. In ambiguous intention conditions, aggressive children were 50% more likely to infer hostile intent than non-aggressive children. No differences were observed in non-ambiguous conditions. Other studies performed among females and males, with both children and adults, and persons suffering from psychological disorders, as well as in a non-clinical population, confirmed that aggressive children and adults were more likely than non-aggressive individuals to assume that hurt was intentional and motivated by hostility (see Orobio de Castro *et al.*, 2002, for review).

Hostile attributional bias is involved in reactive but not in proactive aggression (Dodge, Price, Bachorowski, & Newman, 1990) and predicts violent crimes but not non-violent crimes (Dodge, Price, *et al.*, 1990). It is a reliable predictor of aggressive behaviour problems in the future (Dodge, Bates, & Pettit, 1990) and its manipulation through long-term intervention can lead to aggression reduction (Slaby & Guerra, 1988). Moreover, as Dodge (1993) contends, this bias is not reducible to intelligence or general cue detection skills, socio-economic status, race, or cultural background (Dodge, Price, *et al.*, 1990; Dodge & Somberg, 1987).

An earlier study (Dodge & Somberg, 1987) suggested that social anxiety and threat increase hostile attributional bias. Following the assumption that social cognitive performance may be adversely affected under conditions of negative affect, arousal, and threat to the self, the authors showed that under threatening conditions, aggressive boys displayed a bias toward attributing hostile intentions to peers. Following this reasoning, we hypothesized that a belief working as a buffer against threat might moderate hostile attributional bias. The BJW fits to this function. Lerner (1980) proposed that people need to believe that the world is a just place, where individuals get what they deserve. Our hypothesis that BJW serves a buffer function relies on three distinct bodies of research; describing BJW as a buffer variable in negative and stressful experiences, contributing to a minimization of perceived injustice, and associated to interpersonal trust.

Three properties of BJW

Several studies suggest that BJW may function as a buffer in negative life events. Dzuka and Dalbert (2002) observed that general BJW served as stress buffer for long-term unemployed adolescents, whereas Montada (1998) observed positive correlations among unemployed between BJW and life satisfaction, and negative correlations between BJW and lack of self-esteem, and fear of own future (see also Brown & Grover, 1998; Littrell & Beck, 1999, for similar results). This reasoning is supported by three studies by Dalbert (2002) illustrating that individuals high in BJW were better able to cope with anger-evoking situations. An important study by Tomaka and Blascovitch

(1994) presented elegant experimental evidence of the moderating role that BJW has on stress in a potentially stressful situation. When performing two quick tasks of subtraction, strong just world believers manifested lower stress (measured by psychological and physiological indicators), and committed fewer errors than low just world believers. The authors concluded that 'individuals high in just world beliefs may be predisposed to appraise and experience day-to-day stressors as challenges, whereas those low in just world beliefs may be predisposed to experience the same event as threats' (p. 738). This body of literature (see also Lupfer, Doan, & Houston, 1998) suggests that BJW may influence the appraisal of a potentially threatening situation, and work as a buffer.

Research referring specifically to the just world hypothesis also supports the idea that BJW is involved in the minimization of inflicted injustice. On a self level, several studies show that just world beliefs induce minimization of perceived injustice and tolerance of personal deprivation. Hafer and Olson (1989) conducted several studies examining the relation between BJW and discontent with one's own situation. In two laboratory studies, all participants were denied an opportunity to obtain a 'bonus point' on a computer task that would have helped them to obtain a desirable outcome. On a subsequent questionnaire allegedly providing feedback to the psychology department about the experiment, participants were asked to rate the fairness of the procedures used to assign bonus points. Results showed that strong just world believers appeared to accept or justify personal deprivation more readily than weak just world believers did (see also Birt & Dion, 1987; Hafer & Olson, 1993; Lipkus & Siegler, 1993).

A third property of BJW is its positive links with interpersonal trust (Bègue, 2002; Lipkus, 1991) and negative link with a cynical worldview (Crandall & Cohen, 1994). Three experiments by Zuckerman and Gerbasi (1977) supported the hypothesis that high just world believers have a higher general trust in people. In a first study, the authors observed that high BJW participants were less likely to be suspicious of a deceptive experimental manipulation. A second experiment showed that believers in a just world were more certain that they would receive a free gift. In a third experiment, the authors showed that high believers were more trusting in a government position on various public issues than low believers (see also Furnham, 1995; Hans & Lofquist, 1994). These results suggest that believing that one's world is just may induce confidence and a positive view of people, and given the role of trust in relationships (see Berscheid, 1994, p. 100-105), may make interpersonal relations easier. In the extent to which BJW works as a protective factor, a last specification must be made concerning the recent distinction between two spheres of justice beliefs, because this protective effect is only expected to work for the personal sphere of BJW.

BJW-S and for others

Until recently, most of the experimental or correlational investigations of the BJW were based on general measures of the construct, following the earlier psychometric propositions of Rubin and Peplau (1973). More recently, a bi-dimensional instrument operationalizing the distinction self versus others was notably validated by Lipkus, Dalbert and Siegler (1996). This scale is composed two sets of items, one concerning BJW-S and the other concerning BJW for others (BJW-O). The authors reported findings that confirmed the heuristic value of the differentiation between self and others: BJW-S was found to be more strongly associated to indexes of psychosocial adjustment than BJW-O (Lipkus *et al.*, 1996). Recently, Bègue and Bastounis (2003) further corroborated

this bi-dimensional conceptualization of the BJW. It was demonstrated that BJW-S (and not for others) was correlated to evaluations of the meaning of life. BJW-O was significantly correlated to discrimination against the elderly, stigmatization of poverty and higher penal punishment, while BJW-S was weakly or not related to these variables. Following this conceptualization, we expected a differentiated effect of BJW according to the sphere concerned. More specifically, we hypothesized that BJW-S would act as a protective belief, whereas no effect of BJW-O was expected.

To summarize, we expected that given its buffer function against threat and stressful experiences, its effects on the minimization of perceived injustice, and its association with interpersonal trust, BJW would function as a protective belief against hostile attribution bias. We hypothesized that when confronted with a frustrating agent, individuals with a risk profile (considered by their teachers as troublemakers) and displaying high BJW-S would not react aggressively in an ambiguous intent condition, whereas individuals with low BJW-S would display a hostile attributional bias (Hypothesis 1). This effect should be limited to BJW-S and consequently BJW-O should not modulate aggressive reactions to frustrating agent.

Method

Subjects and procedure

A group of 379 participants (178 males, 198 females and 3 unspecified), aged 10–16 years ($M = 12.64$, $SD = 1.33$) were selected from a semi-rural public high school involved in a longitudinal investigation of the development of conduct behaviour problems. The occupational status of participants' fathers was: employees and operatives 38%, intermediary professions 11.9%, managerial and intellectual staff 10.3%, manufacture and trade 10.3%, and other or unspecified 29.5%. The country of origin of participants' fathers was: France 70.7%, southern Europe 9.8%, Africa 12.9%, and other or unspecified 6.6%. In order to identify children showing behavioural problems, we relied on a teacher-rating procedure (see e.g. Wentzel, 1994). As part of a separate study on social development at school, teachers were asked to evaluate the degree to which each pupil was a troublemaker at school on a 4-point scale. The reliability of the evaluation was ensured through a method of multiple evaluations; each pupil was evaluated on a 4-point scale ranging from *never or almost never* (1), to *always or almost always* (4) for the trait 'troublemaker' by their teachers (from 3 to 8 teachers per child, depending on their availability, $M = 5.15$, $SD = 1.57$). Consistent with the procedure followed by Dodge and Newman (1981), pupils were affected to the troublemaker or the non-troublemaker group depending on the median score provided by the teachers.

Measures

Belief in a just world

Participants filled in a questionnaire including the BJW-S and BJW-O scales (Lipkus *et al.*, 1996). The items were rated from 1 (*strongly disagree*) to 6 (*strongly agree*). The scale, which we made shorter for practical reasons (length of the questionnaire) was composed of three items for BJW-S, $M = 3.71$, $SD = 0.90$, Cronbach's $\alpha = .70$, and three items for BJW-O, $M = 3.35$, $SD = 0.87$, Cronbach's $\alpha = .66$.¹ In order to check the independence of the level of teacher-rated troublemaking level and participant's

¹ The original scale is composed of two sets of eight items. The selection of three items per scale was based on their psychometric properties (high correlation with the whole scale).

BJW, we regressed BJW-S and then for others, on the level of teacher-rated troublemaking. Results indicated that the level of troublemaking was not significantly linked to BJW-S, $B = 0.15$, $t(377) = 1.07$, $p < .29$, nor BJW-O, $B = 0.065$, $t(371) = 0.47$, $p < .64$.

Hostile attributional bias

In order to assess hostile attributional bias, we developed a script following a model offered by Dodge.² A story describing a familiar and problematic social event was written. It was presented on a separate page and entitled 'A scene at the canteen'. The story was the following:

Imagine that you're going to take a meal at the canteen and that you are walking towards a table. You wish to sit down at this table. Several other pupil have already sat down but one seat is free. While you start sitting down, one of the other pupils says 'you can't sit here, that seat is taken'.

At this point, the perceived veracity of the pupils claim was manipulated. To the first third of the sample it was indicated 'in fact you realize that this is not true' (hostile intention). To the second third of the sample it was indicated 'in fact you realize that this is true' (non-hostile intention). To the last third of the sample, no information was given concerning the veracity of the pupil's claim (ambiguity). The story then ended by the sentence 'some other pupils then start to laugh'.

Dependent measure

The affective reactions following the situation were measured by a Likert-type scale composed of two items ranging from *totally disagree* (1) to *totally agree* (5); 'this would make me angry', and 'I would try to take revenge' ($r = .41$, $p < .001$).

Results

Manipulation check

In order to assess the effectiveness of the experimental manipulation, we asked participants to indicate to what extent they believed that the other pupils on the table were actually waiting for someone, on a 4-point scale ranging from *not at all* (1) to *certainly* (4). A one-way ANOVA indicated a significant intent main effect, $F(1, 371) = 3.81$; $p < .02$. Decomposition of this effect with two orthogonal contrasts shows on the one hand that in the benign intent condition, the belief that the pupil was telling the truth was higher ($M = 2.23$, $SD = 1.01$) than in the hostile intent condition, $M = 1.89$, $SD = 1.00$; $t(371) = 2.73$, $p < .007$. On the other hand, the ambiguous intent condition ($M = 2.11$, $SD = 1.00$) was not different from the other two conditions, $t(371) = 0.46$, $p < .65$.

Aggressive reaction

In order to test our predictions, we conducted a regression with the aggressive reaction score as an outcome (see Judd & McClelland, 1989, for details about the regression procedure). First, in terms of predictors, there were BJW-S and BJW-O in mean deviated

²We gratefully thank Kenneth Dodge and Jennifer Lansford for having provided the model.

forms. Second, there was the troublemakers variable which was contrast coded ($-1 = \text{low troublemakers}$, $1 = \text{high troublemakers}$). Third, the intention variable has been contrast coded such that the first contrast opposes the ambiguous intent condition (coded 2) to the other two (coded -1), and the second contrast opposes the hostile intent condition (coded 1) to the benign intent one (coded -1). Finally every first, second, and third order interactions have been computed and entered in the analysis. Computation of all these interactions plus the first order effects (i.e. intention, BJW-S and so on) leads to the creation of 23 predictors. Two degrees of freedom (*df*) tests were conducted using hierarchical regressions.

This analysis first revealed a BJW-S effect, $B = -0.134$, $t(345) = 2.34$, $p < .02$, such that the higher the BJW-S, the lower participants reacted aggressively. This effect was qualified by BJW-O, $B = 0.051$, $t(345) = 2.84$, $p < .005$, indicating that the negative relationship between BJW-S and aggressive reaction was weaker as BJW-O increases. This analysis also revealed a significant intent by BJW-O interaction, $F(2, 345) = 4.45$, $p < .012$. Single *df* tests shows that this interaction reflects the fact that the relationship between BJW-O and aggressive reaction was stronger in the ambiguous intent condition ($B = 0.247$) than in the other two conditions, $B = 0.086$; $t(345) = 2.68$, $p < .008$. There was no such difference between the benign intent condition ($B = 0.011$) and the hostile intent one, $B = -0.182$; $t(345) = 1.36$, $p < .17$.

Most importantly, we also found the expected intent by BJW-S by troublemaker interaction, $F(2, 345) = 7.39$, $p < .001$. Subsequent tests of the single *df* interactions decomposing this three-way interaction revealed that the degree to which relationships between aggressive reaction and BJW-S differed in the ambiguous condition compared with the other two conditions, depends on the level of the troublemaker variable, $B = 0.091$, $t(345) = 2.22$, $p < .027$. This decomposition also revealed that the degree to which relationships between aggressive reaction and BJW-S differed in the hostile and benign conditions, depends on the level of the troublemaker variable, $B = -0.224$, $t(345) = 3.22$, $p < .002$. More interestingly, as far as our predictions are concerned, Fig. 1 shows that for high troublemakers in the ambiguous condition, increase in BJW-S decreases aggressive reaction, $B = -0.360$, $t(345) = 2.48$, $p < .014$, while it is not true for low troublemakers, $B = -0.063$, $t(345) = 0.45$, $p < .66$. In other words, BJW-S does indeed serve as a buffer against aggressive reaction for high but not for low troublemakers. It can also be noted that the only other significant relationship observed

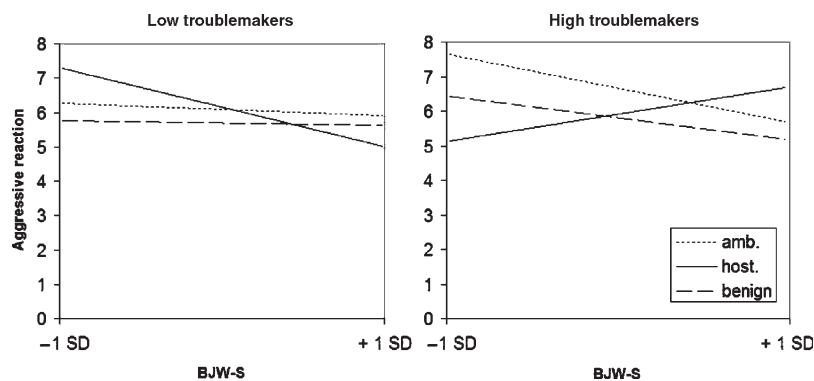


Figure 1. Interaction between BJW-S, intention and troublemaking factors.

in Fig. 1 was a negative one between BJW-S and aggressive reaction concerning low troublemakers in the hostile condition, $B = -0.414$, $t(345) = 3.19$, $p < .002$.

Discussion

Studies on aggressive behaviour have suggested that violent individuals perceive hostility where most people would not. In the present study, we hypothesized that BJW-S would moderate hostile attributional bias. Relying on studies demonstrating that BJW works as a buffer in negative and stressful experiences, contributes to a minimization of perceived injustice, and is associated with interpersonal trust, we hypothesized that BJW-S (but not BJW-O) would function as a protective belief against hostile attribution bias. We expected that the effect would mainly appear among individuals with a risk profile, that is, individuals considered by their teachers as troublemakers. This hypothesis found support in our data: among high troublemakers, in an ambiguous situation, high just world believers for self expressed less aggressive reactions following a frustrating episode than low just world believers. The results also confirmed the relevance of the distinction between BJW-S and for others (Bègue & Bastounis, 2003; Lipkus, Dalbert, & Siegler, 1996) by showing that, as expected, no protective effect of BJW-O was observed ($p < .26$). The interaction between BJW-S and BJW-O on aggressive reaction, suggesting that the negative relationship between BJW-S and aggressive reaction was weaker as BJW-O increases, further confirms the idea that distinguishing BJW-S from BJW-O is necessary (see Bègue & Bastounis, 2003). The issue of the relations between both spheres of BJW was raised by Dalbert (2001), who suggested a developmental path between these two forms of justice beliefs. Our results are consistent with studies showing that BJW-O is more often associated with undesirable outcomes than BJW-S (Bègue & Bastounis, 2003).

This study confirms the positive function of BJW-S in interpersonal relationships, as several authors have proposed. It suggests that knowledge structure, such as BJW-S, may modulate social information processing. This protective function is consistent with findings stressing the importance of justice belief in social development (Dalbert, 2001). Future studies could focus on the development of just world beliefs in order to understand which factors contribute to its formation. Family factors, as well as school experience and society-wide influences, should be investigated. Concerning family factors, both Dalbert & Goch (1998), found evidence that a strong personal BJW is related to a strong positive emotion orientation (i.e. harmony, low inconsistency, lack of manipulation tactics) within family upbringing. This is consistent with a large number of developmental studies showing that harsh and/or erratic parenting represent a proximal factor of behavioural problems, delinquency (Mc Cord, 1995), and maladaptive social information processing style (Weiss, Dodge, Bates, & Pettit, 1992).

Future research should also focus on the contribution of belief in a just world as a buffer against aggressive reaction under higher emotional involvement. In the current study, we have provided data suggesting that explicit version of BJW (see Hafer & Bègue, 2005, concerning the distinction between implicit and explicit BJW) is an efficient buffer against aggressive reaction induced by a scenario methodology. Despite the relevance of the scenario methodology we relied on (see Orobio de Castro *et al.*, 2002), it remains to be demonstrated that BJW-S as measured by a Likert-type scale is an efficient buffer under higher threat. As suggested by Hafer and Bègue, we may consider that the need to believe in a just world might also occur in both implicit and explicit forms. Implicit motives, which are seen as generally outside people's conscious

awareness and, thus, less amenable to traditional self-report measurement, may better predict affectively laden judgments (see Woike, 1995). Such judgments are more likely to result from the high impact environment of certain experiments. In contrast, explicit or self-attributed motives, which are presumably more conscious and therefore measurable through self-report instruments, may be associated with less emotionally based, more cognitive assessments. Thus, if scores on just-world scales are more reflective of explicit motives (see Dalbert, 2001, p. 30–32, for a diverging opinion), then one might expect stronger correlations between these scores and judgments made under low impact conditions provoking deliberative thought, such as those in many correlational investigations. In the present study, the experimental manipulations were based on a verbal stimulus, which may be less involving than real-life events, as well as the measure of just world beliefs. A future challenge would be to demonstrate that an experimental manipulation of BJW-S moderates hostile attribution bias with a more involving setting among at-risk youth.

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