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## Cultural context and the relationship between autistic traits and belief in a just world

Alex Bertrams\*

University of Bern, Switzerland

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### ABSTRACT

In the USA, people who are high in autistic traits have been found to have lower degrees of general belief in a just world than people who are low in autistic traits. One explanation for this relationship could be that people with high levels of autistic traits receive relatively little influence from their social contexts and are therefore less likely to adopt cultural views. If this assumption is correct, the relationship between autistic traits and belief in a just world should be mitigated in cultures wherein the belief in a just world is relatively low (e.g., Great Britain). In this study, 241 participants from Great Britain and 249 participants from the USA completed measures of general belief in a just world and autistic traits. Multiple regression analyses revealed that the general belief in a just world was lower in Great Britain than in the USA. Moreover, culture served as a moderator: while autistic traits were negatively related to belief in a just world in the USA, these variables were unrelated in Great Britain. The present findings suggest that cultural context may be an important aspect in autism research, and autistic traits may be a useful variable in cross-cultural psychology.

Individuals differ in the degree to which they hold a *general belief in a just world*—that is, the view that people generally get what they deserve and deserve what they get (Furnham, 2003; Lerner, 1980). A high degree of general belief in a just world is considered to be a positive illusion that helps individuals cope with the uncertainties and potential threats of life (Lerner, 1980). Accordingly, a higher degree of belief in a just world is associated with higher wellbeing (Yu et al., 2018). However, belief in a just world can also lead to victim blaming, in line with the view that people get what they deserve (Furnham, 2003). Thus, belief in a just world is a fundamental aspect of an individual's personality that affects their experiences and behaviors.

To a crucial extent, an individual's general belief in a just world is shaped by culture (Lerner, 1980). For instance, one cross-cultural study showed that belief in a just world was significantly higher in the USA than in Great Britain (Furnham, 1993). Cultural levels of belief in a just world are communicated via individuals' social contexts and remain fairly stable as they are passed on to succeeding generations (Furnham, 2003).

Recently, Bertrams (2020) showed that people from the USA who were high in autistic traits held lower levels of general belief in a just world than those who were low in autistic traits. The present study aimed to examine whether this relationship is dependent on cultural

context. Characteristics of autism include reduced levels of social interaction and exchange as well as relative independence from social context (American Psychiatric Association, 2013; Kaneko et al., 2020). The low theory of mind typically found in people who are high in autistic traits (Best et al., 2008) may act as a social barrier, decreasing their levels of social exchange and thus decreasing the impact of their social contexts. As a consequence, these individuals should be less likely to be influenced by cultural norms and values, including their cultures' levels of general belief in a just world.

It was predicted that the relationship between higher autistic traits and a lower general belief in a just world would be stronger in a culture wherein belief in a just world is strongly present (USA) than in a culture wherein belief in a just world is significantly less strong (Great Britain). This hypothesis provides an indirect test of the extent to which the social context influences people who are high in autistic traits. These individuals' levels of belief in a just world should be more different from those of people who are low in autistic traits in countries where there is a substantial cultural belief in a generally just world that is transmitted via social interaction (the USA). In Great Britain, even people who are low in autistic traits should not be strongly socialized to believe that the world is just, given that this cultural view is not very salient there.

\* University of Bern, Educational Psychology Lab, Institute of Educational Science, Faculty of Human Sciences, Fabrikstrasse 8, 3012 Bern, Switzerland.  
 E-mail address: [alexander.bertrams@edu.unibe.ch](mailto:alexander.bertrams@edu.unibe.ch).

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## 1. Methods

### 1.1. Participants

The present sample consisted of 490 individuals recruited from Great Britain ( $n = 241$ ) and the USA ( $n = 249$ ) via the working platform Prolific (for their sociodemographic data, see Table 1). The sample size exceeded the minimum size of 170 needed to detect even small-sized effects (power analysis with G\*Power 3.1, Faul et al., 2009; input parameters: two-tailed,  $H1 \rho^2 = 0.10$ ,  $H0 \rho^2 = 0$ ,  $\alpha = 0.05$ ,  $1 - \beta = 0.80$ , number of predictors = 8). Prior to the analyses, the data of 142 additional individuals in the raw data set were excluded due to failed attention checks, formal autism diagnoses, or incomplete data (Great Britain:  $n_{\text{excluded}} = 76$ ; USA:  $n_{\text{excluded}} = 66$ ).

### 1.2. Procedure and measures

After giving their written informed consent, the participants provided sociodemographic information (e.g., age and gender) and indicated whether they had been formally diagnosed with autism. This was followed by an attention check (e.g., Bertrams & Schlegel, 2020). Next, psychometric scales and a test of cognitive ability were presented in a randomized order, with each appearing on a separate page. Cognitive styles and ability were measured as control variables for auxiliary analyses, as these variables could influence one’s general belief in a just world (Bertrams, 2020; Lerner, 1998). Finally, the participants were thanked, debriefed, and compensated with £4 ( $\approx$ US \$5).

#### 1.2.1. Global Belief in a Just World Scale (GBJWS; Reich & Wang, 2015)

This scale consists of seven items (e.g., “I feel that most people get what they are entitled to have”) with 7-point response scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The item responses are summed to form a total score; a higher total score represents a higher general belief in a just world. The Cronbach’s  $\alpha$  of this measure was 0.90 in the present study.

**Table 1**  
Demographic information.

	Total sample ( $N = 490$ )	Great Britain ( $n = 241$ )	USA ( $n = 249$ )
Age ( $M \pm 1SD$ ; years)	46.15 $\pm$ 15.85	45.83 $\pm$ 15.35	46.46 $\pm$ 16.35
Gender			
Male	48.4%	47.7%	49.0%
Female	51.4%	52.3%	50.6%
Other	0.2%	0%	0.4%
Ethnicity			
Asian/Pacific Islander	6.1%	6.2%	6.0%
Black	9.0%	5.8%	12.0%
Hispanic or Latino	3.1%	0%	6.0%
Native American or American Indian	0.2%	0%	0.4%
White	74.1%	78.8%	69.5%
Mixed	3.3%	0.8%	5.6%
Other	4.3%	8.3%	0.4%
Highest level of education			
Did not finish secondary education	0.4%	0%	0.8%
A-levels, high school diploma, General Certificate of Education (or equivalent)	38.0%	44.0%	32.1%
Bachelor’s degree	39.2%	35.7%	42.6%
Postgraduate degree (master’s or higher)	19.2%	19.1%	19.3%
Other	3.3%	1.2%	5.2%
Employment			
Self-employed	14.7%	13.7%	15.7%
State-employed	10.4%	13.7%	7.2%
Employed by private company or organization	39.4%	35.3%	43.4%
Homemaker	3.5%	2.9%	4.0%
Unemployed	14.9%	15.4%	14.5%
Other	17.1%	19.1%	15.3%

#### 1.2.2. Autism Spectrum Quotient (AQ; Baron-Cohen et al., 2001)

The AQ has 50 items that measure different categories of autistic traits (e.g., “I often notice small sounds when others do not”) with 4-point response scales ranging from *definitely agree* to *definitely disagree*. Responses of definitely/slightly agree and definitely/slightly disagree are awarded one and zero points, respectively (or zero/one points for reversed items). The responses are summed to form a total score; higher scores reflect higher autistic traits. In this study, the Cronbach’s  $\alpha$  of this measure was 0.84.

#### 1.2.3. Rational-Experiential Inventory-40 (REI-40; Pacini & Epstein, 1999)

The REI-40 measures preference for a rational cognitive style (e.g., “I have a logical mind”) and preference for an experiential cognitive style (e.g., “I believe in trusting my hunches”) with 20 items each. These items have 5-point response scales ranging from 1 (*definitely not true of myself*) to 5 (*definitely true of myself*). A higher sum score for each of the two subscales indicates a higher rational or experiential cognitive style, respectively. In the present study, the Cronbach’s  $\alpha$  of the rational subscale was 0.87 and that of the experiential cognitive subscale was 0.86.

#### 1.2.4. Baddeley’s Grammatical Reasoning Test (BGRT; Baddeley, 1968)

In this test of cognitive ability, the participants are presented with items consisting of statements that describe the order of two letters (A and B) using the verbs “precede” or “follow” in active or passive voice, positively or negatively (e.g., “A does not follow B,” “B is preceded by A”), followed by a letter pair (“BA” or “AB”). For each item, the participant decides as quickly as possible whether the statement is true or false with respect to the letter pair. Each participant has 3 min to solve as many items as possible out of 64 total items. The number of correctly solved items represents the participant’s cognitive ability level. The Cronbach’s  $\alpha$  of this measure was 0.96 in the present study.

## 2. Results

Table 2 shows the means, standard deviations, and the correlation matrix for the applied measures, separated by culture. In a multiple regression analysis, general belief in a just world was regressed on culture (Great Britain vs. the USA), the centered AQ scores (autistic traits), and their interaction term (culture  $\times$  centered AQ scores). A significant interaction would indicate moderation (Abbas, Aqeel, Abbas, et al., 2019; Abbas, Aqeel, Jaffar, et al., 2019; Azhar et al., 2018). To analyze the expected interaction, the recoding procedure (Cohen et al., 2003) was applied to the total sample data.

The overall regression model was significant ( $F[3, 486] = 7.25, p < .001$ ). As indicated by the significant main effect of culture, general belief in a just world was lower in Great Britain than in the USA ( $B = 1.66, SE B = 0.72, \beta = 0.10, t = 2.30, p = .02$ ). Consistent with the hypothesis, a significant interaction was found ( $B = -0.19, SE B = 0.10, \beta = -0.13, t = -2.05, p = .04$ ), indicating that the relationship between autistic traits and global belief in a just world differed between Great Britain and the USA. In the USA, higher autistic traits significantly predicted a lower degree of general belief in a just world ( $B = -0.27, SE B = 0.07, \beta = -0.25, t = -3.91, p < .001$ ). In Great Britain, autistic traits were not significantly related to belief in a just world ( $B = -0.08, SE B = 0.07, \beta = -0.07, t = -1.18, p = .24$ ). This interaction is displayed in Fig. 1. These findings did not change after age, gender, cognitive style, and cognitive ability were added to the regression model as covariates.

## 3. Discussion

In line with recent research (Bertrams, 2020), the present study showed that higher autistic traits were associated with a lower degree of general belief in a just world in the USA. However, this relationship was nonexistent in Great Britain. This pattern was independent of individual

Table 2

Descriptive statistics, mean comparisons, and correlations for the applied measures, separated by culture.

Measure	Great Britain		USA		$\Delta M^a$	Correlations <sup>b</sup>				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		1	2	3	4	5
1. General belief in a just world (GBJWS)	24.21	7.16	25.83	8.92	1.62*	–	–0.09	0.14*	0.13*	–0.07
2. Autistic traits (AQ)	19.93	7.97	20.13	7.32	0.20	–0.22***	–	0.03	–0.003	0.21**
3. Rational cognitive style (REI-40)	60.68	4.84	72.75	14.62	12.07***	0.22***	–0.03	–	0.36***	–0.10
4. Experiential cognitive style (REI-40)	62.99	4.77	68.14	14.20	5.15***	0.06	–0.23***	0.07	–	–0.07
5. Cognitive ability (BGRT)	31.00	12.59	29.88	13.49	1.12	–0.23***	0.11	0.10	–0.12	–

Note.  $N = 490$ ,  $n_{\text{Great Britain}} = 241$ ,  $n_{\text{USA}} = 249$ . GBJWS = Global Belief in a Just World Scale, AQ = Autism Spectrum Quotient, REI-40 = Rational-Experiential Inventory-40, BGRT = Baddeley's Grammatical Reasoning Test. Correlations for participants from Great Britain are above the diagonal; correlations for participants from the USA are below the diagonal.

<sup>a</sup> Independent samples *t*-tests were performed to compare the means between Great Britain and the USA.

<sup>b</sup> Pearson product-moment correlation coefficients.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

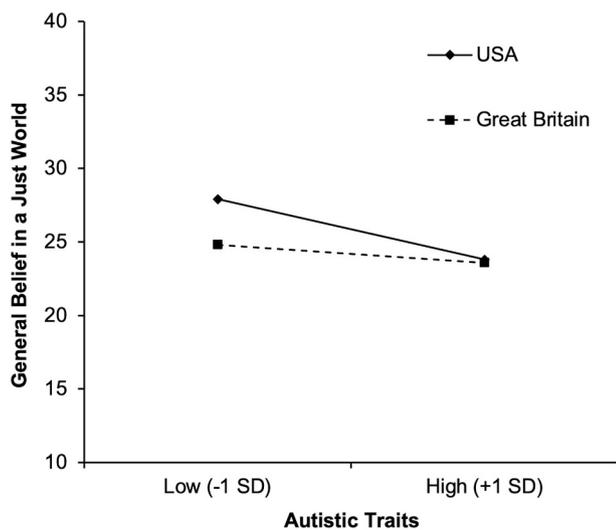


Fig. 1. General belief in a just world depending on autistic traits and culture (Great Britain vs. USA).  $N = 490$ .

differences in age, gender, cognitive style, and cognitive ability. One interpretation of these findings is that people who are high in autistic traits receive relatively little influence from their social contexts; therefore, with respect to a given social norm, these individuals should only be different from those who are lower in autistic traits in countries wherein the social norm is sufficiently present (in this case, the USA).

The findings of this study indicate that autism researchers, when making conclusions, should consider that the degree to which autistic traits are related to variables of interest can be limited to specific cultural frameworks. In addition, cross-cultural researchers could refer to individual differences in autistic traits to explain variance in the adaptation of social norms within a single culture. Future research could use measures beyond self-report scales (e.g., deep interviews; Yoosefi lebni et al., 2019), apply longitudinal designs to allow for causal inferences, and examine the psychological and sociological processes that underlie the relational pattern found in this study. Moreover, to assess the extent to which the present findings are generalizable, additional cultures should be examined in future studies.

#### Ethical approval/patient consent

The study was approved by the Institutional Review Board of the Faculty of Human Sciences at the University of Bern (reference number: 2019-05-00004). All participants provided written informed consent.

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#### CRediT authorship contribution statement

AB conceived the project, designed the study, conducted the study, prepared the data set, analyzed the data and wrote the manuscript.

#### Declaration of competing interest

The author declares that he has no conflict of interest.

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