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The Belief in a Just World and Personality: A Meta-analysis

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Abstract Several meta-analyses using twelve studies were conducted, combining different forms of the belief in a just world (BJW) and the five-factor model in order to determine possible relationships between personality factors and individual differences regarding justice. As expected, the general ($n = 2579$) and personal ($n = 1346$) forms of BJW were negatively associated with neuroticism, and positively associated with extraversion and agreeableness. Summary effect sizes for neuroticism, extraversion, and agreeableness were $r = -0.08$, $r = 0.10$, and $r = 0.09$ concerning the general BJW, and $r = -0.25$, $r = 0.18$, and $r = 0.10$ concerning the personal BJW, respectively. Although no causality could be determined, possible interpretations of the relationships include BJW as a personal resource that increases emotional stability, BJW and extraversion's reciprocity in the developmental process, and trust as an origin of both agreeableness and just world beliefs. In addition, the associations were significantly stronger when the personal BJW was used, as opposed to the general form, but only regarding neuroticism and extraversion. Attitudes concerning others and their well-being may explain the differential gap of associations when using BJW for the self or for others.

Keywords Belief in a just world · Five-factor model · Neuroticism · Extraversion · Agreeableness · Meta-analysis

Introduction

A fundamental way in which human experience is organized is through the belief in a just world (BJW). It asserts that people get what they deserve (Lerner, 1980),

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hence rewards and punishment are always the result of virtue and vice. BJW enables coping with one's physical and social environment as if they were stable and orderly, serves as an important adaptive function for the individual (Lerner & Miller, 1978), and is required for achieving long-term goals (Hafer, 2000). BJW was conceptualized as a stable personality characteristic that indicates an implicit justice motive (Dalbert, 2001), with a widespread range of associations: from conservative social attitudes and political views (Dittmar & Dickinson, 1993; Furnham & Procter, 1989; Rubin & Peplau, 1975), to higher trust, well-being and life satisfaction (Lipkus, 1991; Lipkus, Dalbert, & Siegler, 1996), and moderating relationships between illness attributions and fairness judgment (Nudelman & Shiloh, 2011). It seems to be essential for dealing with the harsh realities of the world (Furnham, 2003) and can explain a need to restore justice: either by compensation and helping behaviors or by victim blaming and derogation (e.g., Lerner & Simmons, 1966; Montada, 1998; Zuckerman, 1975).

Rubin and Peplau (1975) divided the development of the belief into three origins: first, the Western culture, emphasizing the reward and punishment following "good" or "bad" behaviors in fairy-tales and myths, as well as in monotheistic religions; second, a psychological function, necessary for the shift from the "pleasure principle" to the "reality principle", which involves delaying gratification based on the notion that such action will be rewarded later on (Lerner, 1974); third, a cognitive and moral development, based on Piaget (1965), where children perceive the authorities as all-knowing. Therefore, if someone is punished or rewarded, it must be due to that person's previous actions. Although this "immanent justice" tends to decline through a process of maturation and experience (Rubin & Peplau, 1975), it might partly endure in adulthood (Callan, Sutton, & Dovale, 2010).

Recently, there has been an increasing differentiation in the literature between BJW for self and for others (Lipkus et al., 1996), or personal versus general (Dalbert, 1999). Personal BJW is mainly concerned with processes involving the self, distinguishing it from justice concerns regarding other people. Consequently, BJW for self correlated consistently with self-reports of psychological well-being, while having the weakest correlations with perception of others' well-being. In contrast, BJW for others correlated the strongest with perception of others' psychological well-being, and weakest with self-reports of those measures (Lipkus et al., 1996). Further research has found that BJW for self was uniquely associated with psychological health, while BJW for others was uniquely associated with harsh social attitudes (Bègue & Bastounis, 2003; Sutton & Douglas, 2005).

In light of the centrality of BJW for people's psychological life, its relationships with other aspects of personality need to be determined. A leading theory of basic personality dimensions, which had been found stable across cultures (McCrae & Costa, 1997) and time (Costa & McCrae, 1988), is the five-factor model (FFM). It suggests five important personality factors in which individuals differ: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (Costa & McCrae, 1992). Neuroticism includes anxiety, depression, and impulsiveness; extraversion refers to gregariousness and enthusiasm; openness to experience entails imagination and aesthetics; agreeableness involves altruism, compliance, and trust;

and conscientiousness contains dutifulness and self-discipline (McCrae & John, 1992).

All five factors were found to be correlated with positive and negative affect, primarily neuroticism with negative affect and extraversion with positive affect (Watson & Clark, 1992). Generalized anxiety and major depressive disorders were negatively correlated with extraversion and conscientiousness, and positively with neuroticism (Kotov, Gamez, Schmidt, & Watson, 2010). In addition, the compliance facet of agreeableness and the activity facet of extraversion were associated with antisocial personality disorder symptoms (Le Corff & Toupin, 2010). BJW has also shown associations with negative and positive affect, self-esteem and life satisfaction beyond neuroticism and extraversion (Dzuka & Dalbert, 2002), as well as life and job satisfaction beyond the five factors (Otto, Glaser, & Dalbert, 2009), supporting its status as a unique dimension of personality.

Research has produced mixed results regarding the associations between BJW and the FFM dimensions. This may be due to the distribution of effect sizes across studies and the magnitude of the overall associations. If an overall effect size is small, many results may not reach significance, and can even be opposite to its direction. The only way to determine the true direction and magnitude of the overall effect size is through a meta-analysis, prompting the need for a comprehensive synthesis of the literature in the field. Hence, the purpose of the current article was to perform several meta-analyses between BJW and the FFM dimensions in order to determine the relationships between these different aspects of personality. The merit of this approach lies with its ability to detect even small effects, and adjust calculations to different measures and populations from which samples are drawn. While none of the five factors demonstrated a completely consistent correlation with BJW, theoretical considerations promoted several predictions regarding possible associations.

Hypotheses

The first hypothesis was that a negative relationship would be found between BJW and neuroticism. The literature regarding BJW has shown it to be a personal resource (Dalbert, 2001), with the ability to buffer events undermining a person's tranquility (Furnham, 2003), and thus decrease anxiety and depression (Lipkus et al., 1996). Therefore, since it helps to maintain mental health (Dalbert, 2002), higher BJW was predicted to be associated with lower levels of neuroticism.

The second hypothesis was that a positive relationship would be found between BJW and extraversion. Both constructs share a positive attitude towards the external world: either by being outgoing and excitement-seeking (extraversion), or by assuming the world treats people in a deserving manner (BJW). Believing people get what they deserve may lead to lower risk perceptions (Lambert, Burroughs, & Nguyen, 1999), thus provide a safe environment for self-exposure, leading to higher extraversion. According to this view, Costa & McCrae's (1980) model of extraversion influencing well-being begins with an earlier stage of just world

beliefs, eventually resulting in another indirect path of the effect of BJW on well-being (Dzuka & Dalbert, 2007).

The third hypothesis was that a positive relationship would be found between BJW and agreeableness. Both concepts involve a tendency to maintain social order and status quo (Dittmar & Dickinson, 1993; LePine & Van Dyne, 2001; Rubin & Peplau, 1973), as well as cooperative tendencies and trust (McCrae & John, 1992; Zuckerman & Gerbasi, 1977). Therefore, basic trust might be a possible antecedent to agreeableness and just world beliefs. Mistrust creates a sense that the world is unpredictable and unreliable (Bernath & Feshbach, 1995). Hence, actions may fail to produce the appropriate results (low BJW) and people's intentions might be questionable, leading to unfriendly behavior (low agreeableness). A different line of reasoning suggests that perceiving the world as *unjust* decreases predictability (Lerner, 1965) and increases vigilance, which may result in suspicion of others and unfriendly behavior. Therefore, Lower BJW should be associated with less agreeableness. Although victim blaming and derogation were found among people with high BJW (e.g., Montada, 1998), in situations where helping was possible and reasonable, they demonstrated a greater willingness to do so (Miller, 1977).

The final hypothesis involved the personal and general BJW distinction in the formerly predicted associations: In accordance with Lipkus et al. (1996), and since the FFM measure is a self-reported scale regarding *the self*, stronger associations were expected when utilizing the BJW for self than for others. However, when analyzing the nature of the constructs, agreeableness involves caring for others and attitudes concerning people in general (Costa & McCrae, 1992). In addition, its association with empathy (Graziano, Habashi, Sheese, & Tobin, 2007) indicates the relevance of BJW for others to the self. Therefore, another possibility was that while extraversion and neuroticism would follow the previously suggested pattern of stronger associations with personal BJW than with general BJW, agreeableness might be related to justice perceptions regarding others at least as strongly as regarding the self.

Method

Literature Search

A literature review using psycINFO, psycARTICLES, and Web of Science databases was conducted at the beginning of August 2011. The FFM key words were *conscientiousness*, *neuroticism*, *agreeableness*, *extraversion*, *openness*, *Big Five*, *Five-Factor*, *Five-Factor model*, *FFM*, and *personality*. The BJW key words were *Just world*, *Belief in a just world*, and *BJW*. All possible combinations between each FFM key word and each BJW key word were used in the search. The Google Scholar search engine was also searched for articles, using the combination "belief in a just world" and "big five" or "five-factor model". Relevant studies and review articles were searched for cited papers, and a request for relevant studies was sent via email to the listserv of the International Society for Justice Research.

Inclusion Criteria and Data Retrieval

In order for a study to be included in the meta-analysis, three criteria had to be met. The first criterion was having a measure of the belief in a just world, either general or personal. Only validated BJW scales were included (specifically, Dalbert, 1999; Dalbert, Montada, & Schmitt, 1987; Lipkus, 1991; Lipkus et al., 1996; Rubin & Peplau, 1973, 1975). The second criterion was having a measure of at least one factor of the FFM. Personality inventories measuring constructs (namely, neuroticism and extraversion) parallel to and highly correlated with FFM factors (Avia et al., 1995) were also included (specifically, EPQ, Eysenck & Eysenck, 1975; FPI, Fahrenberg, Selg, & Hampel, 1978). The third criterion was having at least one association of the possible combinations between the five factors and BJW scales. However, six articles did not report any result from which an effect size could be calculated, and three used only the neuroticism and extraversion factors. In order to retrieve the unreported effect sizes and possible unpublished data, twelve authors were contacted via email, six of whom responded. Several unreported correlations were retrieved (Otto et al., 2009; Schmitt, Gollwitzer, Maes, & Arbach, 2005), and one unpublished study was found (Otto, 2006). Eventually, twelve independent studies were included in the analyses.

Measurement Considerations and Analyses

The classification of a BJW scale as relating to self or others appears unclear pertaining to questionnaires prior to this distinction. However, most of the items in Lipkus's (1991) general BJW scale are identical to those in Lipkus et al.'s (1996) BJW for others (i.e., "I feel that people get what they are entitled to have"). In addition, Dalbert et al.'s (1987) general BJW questionnaire is used unchanged alongside and countering the personal BJW (Dalbert, 1999), assuming it refers to others as opposed to the self. Furthermore, high correlations of similar magnitude were found among the general BJW scales and BJW for others, as opposed to lower correlations between all of them and BJW for self (Lipkus et al., 1996). Thus, all the general/others BJW scales seem to represent the same construct, as oppose to the personal/self BJW scales, which represent a different one. Therefore, two sets of meta-analyses regarding possible associations were computed: one using BJW for self or personal, and another using BJW for others or general versions.

The effect size used for the calculations of the relationships between either one of the two BJW scales and each of the FFM dimensions was the Pearson correlation coefficient. Different subgroups in a study (e.g., men/women) and studies reporting results for just and unjust items separately for the same sample were combined using a random effects meta-analysis approach (Borenstein, Hedges, Higgins, & Rothstein, 2009). Multiple time points of the same sample were combined by computing the mean of the Fisher's Z transformed correlations. When BJW measures for self and for others were used, both were included separately in the analysis. Only one study measured several general/others BJW measures in the same sample (Lipkus et al., 1996), of which the predominant in the current meta-analysis was selected (Dalbert et al., 1987).

In order to meta-analyze the expected differences between associations of the FFM factors with personal and general BJW, and considering the low number of studies with only one of them, a calculation based on samples having both BJW scales was conducted. A new effect size (ES_{diff}) was computed for each study, using the correlations between both BJW measures and the relevant factor (Borenstein et al., 2009). Fisher's Z was utilized, and the formulas were as follows

$$ES_{diff} = \text{Fisher}(r_{PBJW}) - \text{Fisher}(r_{GBJW}),$$
$$\text{Var}(ES_{diff}) = 2 \times \left(\frac{1}{n-3}\right) \times (1 - r_{PGBJW}),$$

where r_{PBJW} is the correlation between personal BJW and the respective factor from the FFM, r_{GBJW} is the correlation between general BJW and the factor, $\text{Var}(ES_{diff})$ is the variance of ES_{diff}, and r_{PGBJW} is the correlation between personal and general BJW.

The overall effect size was calculated for each relationship using a random effects model. As opposed to a fixed effect model, assuming one effect size, the random effects model assumes studies represent populations with similar but not identical effect sizes. Thus, the overall effect size represents the mean of a distribution based not only on error, but on real differences between effect sizes. This conservative approach includes both between and within variance, and the relative weights assigned are usually more balanced than in the fixed effect model (Borenstein et al., 2009).

Results

Correlations and sample sizes of twelve studies are presented in Table 1. The results of the meta-analyses between the FFM dimensions and general (n = 2,579) and personal (n = 1,346) forms of BJW are presented in Table 2, including heterogeneity measures.

The first hypothesis was that a negative relationship would be found between BJW and neuroticism. As predicted, this association was significant when using the general or personal BJW. Rosenthal's (1979) fail-safe N's for the two effects were 40 and 222, respectively.

The second hypothesis was also supported, and a significant positive relationship was found between both forms of BJW and extraversion. Rosenthal's (1979) fail-safe N regarding the general BJW was 61 and regarding the personal BJW was 127.

As predicted by the third hypothesis, a positive relationship was found between the two forms of BJW and agreeableness. Rosenthal's (1979) fail-safe N's for general and personal BJW were 45 and 15, respectively.

Openness to experience and conscientiousness were not associated with BJW, except for a correlation between personal BJW and conscientiousness. However, Rosenthal's (1979) fail-safe N in this case was 10, indicating low robustness of the finding.

Table 1 Correlations between BJW and the FFM dimensions of studies included in the meta-analyses

Study	*n*	G/P-BJW	*N*	*E*	*A*	*O*	*C*	FFM/M	BJM/M
Dzuka and Dalbert (2002)	176	General	−0.069	−0.002	–	–	–	FPI	D87
Heaven and Connors (1988)	198		−0.087	0.098	–	–	–	EPQ	R75
Keller and Siegrist (2010)	950		−0.120	−0.020	0.190	−0.070	0.060	BFI-K	D87
Lipkus et al. (1996) (study 1)	94		0.040	0.170	0.140	−0.140	−0.020	NEO-FFI	D87
Lipkus et al. (1996) (study 2)	201		−0.170	0.190	0.170	0.210	0.120	BFPD	D87
Otto (2006)	148		−0.079	0.182	−0.095	−0.127	−0.127	NEO-FFI	D87
Otto et al. (2009) (study 1)	395		−0.006	0.220	0.022	−0.001	−0.018	NEO-FFI	D87
Otto et al. (2009) (study 3)	77		0.099	0.076	0.047	−0.170	−0.027	NEO-FFI	D87
Schmitt et al. (2005)	128		−0.201	0.181	0.265	−0.022	0.144	NEO-FFI	D87
Wolfradt and Dalbert (2003)	212		−0.080	−0.040	−0.030	−0.290	0.140	NEO-FFI	D87
Dzuka and Dalbert (2002)	176	Personal	−0.180	−0.017	–	–	–	FPI	D99
Dzuka and Dalbert (2007)	110		−0.178	−0.001	–	–	–	NEO-FFI	D99
Lipkus et al. (1996) (study 1)	94		−0.370	0.110	−0.140	−0.020	0.090	NEO-FFI	L96
Lipkus et al. (1996) (study 2)	201		−0.310	0.260	0.170	0.260	0.150	BFPD	L96
Otto (2006)	148		−0.305	0.349	0.059	0.119	0.128	NEO-FFI	D99
Otto et al. (2009) (study 1)	395		−0.240	0.336	0.090	0.020	0.026	NEO-FFI	D99
Otto et al. (2009) (study 2)	145		−0.192	0.159	0.268	−0.081	0.131	NEO-FFI	D99
Otto et al. (2009) (study 3)	77		−0.171	0.151	0.065	0.000	−0.025	NEO-FFI	D99

Correlations using unjust items or scales in which higher scores reflect greater emotional stability were reversed

G/P-BJW general or personal BJW, *N* neuroticism, *E* extraversion, *A* agreeableness, *O* openness, *C* conscientiousness, *FFM/M* five-factor model measure, *BJW/M* belief in a just world measure, *FPI* Freiburger PersönlichkeitsInventar (Fahrenberg et al., 1978), *EPQ* Eysenck personality questionnaire (Eysenck & Eysenck, 1975), *BFI-K* short version of the big five inventory (Rammstedt & John, 2005), *NEO-FFI* NEO five-factor inventory (Costa & McCrae, 1989), *BFPD* big five personality dimensions (Goldberg, 1992), *D87* Dalbert et al. (1987), *R75* Rubin and Peplau (1975), *D99* Dalbert (1999), *L96* Lipkus et al. (1996)

Table 2 Summary effects, confidence intervals, and heterogeneity measures

FFM factor	G/P-BJW	ES(r)	LL	UL	Z	$p(Z)$	Q	df (Q)	$p(Q)$	I^2	τ
Neuroticism	General	−0.083	−0.128	−0.037	−3.568	0.000	10.875	9	0.284	17.241	0.030
	Personal	−0.246	−0.296	−0.194	−9.119	0.000	5.559	7	0.592	0.000	0.000
Extraversion	General	0.101	0.026	0.175	2.635	0.008	27.862	9	0.001	67.698	0.096
	Personal	0.179	0.071	0.283	3.228	0.001	26.863	7	0.000	73.942	0.134
Agreeableness	General	0.091	0.004	0.178	2.044	0.041	23.953	7	0.001	70.776	0.102
	Personal	0.098	0.003	0.191	2.014	0.044	10.982	5	0.052	54.472	0.086
Openness	General	−0.071	−0.168	0.028	−1.406	0.160	30.491	7	0.000	77.043	0.120
	Personal	0.058	−0.047	0.162	1.087	0.277	13.228	5	0.021	62.201	0.101
Conscientiousness	General	0.042	−0.018	0.101	1.380	0.168	11.168	7	0.131	37.318	0.050
	Personal	0.080	0.020	0.140	2.598	0.009	3.695	5	0.594	0.000	0.000

G/P-BJW general or personal belief in a just world, *ES(r)* summary effect size, *LL* lower limit, *UL* upper limit, Q sum of ratios of observed variation to the within-study error, I^2 ratio of true homogeneity to total variance, τ standard deviation of true effects

The final hypothesis concerned the difference between associations using personal and general BJW with regard to neuroticism, extraversion, and agreeableness. A correlated outcomes approach was used, and therefore only six samples were included in the analysis for neuroticism and extraversion, and five samples in the analysis for agreeableness. In addition, the necessary correlation between BJW for self and others was not reported in one study. Therefore, a meta-analytic calculation using the known correlations and a random effects model was conducted, $Q(4) = 11.677$, $p < 0.05$, resulting in a summary effect size of $r = 0.501$, which was used for this study.

The summary ES_{diff} for neuroticism was -0.220 (SE = 0.035), and for extraversion was 0.086 (SE = 0.032). As expected, the negative relationship between BJW and neuroticism and the positive relationship between BJW and extraversion were significantly stronger for personal than for general BJW, $Z = -6.266$, $p < 0.001$; $Z = 2.715$, $p < 0.01$, respectively. The summary ES_{diff} for agreeableness was 0.016 (SE = 0.056), and was not significant, $Z = 0.288$, $p = 0.773$. In other words, no difference was found between the association of agreeableness with personal and general BJW.

The heterogeneity measures for the ES_{diff} regarding neuroticism, $Q(5) = 6.283$, $p(Q) = 0.280$, $I^2 = 20.425$, $\tau = 0.039$; extraversion, $Q(5) = 5.394$, $p(Q) = 0.370$, $I^2 = 7.309$, $\tau = 0.022$; and agreeableness, $Q(4) = 9.859$, $p(Q) = 0.043$, $I^2 = 59.429$, $\tau = 0.095$, generally did not support variations in true effect sizes. Nonetheless, the lack of significance should not be taken as evidence of consistent effect sizes, since the Q test has low statistical power when there are relatively few effect sizes (Lipsey & Wilson, 2001) and the combination of studies performed by independent researchers using different populations corresponds with a random effects model (Borenstein et al., 2009).

Discussion

The purpose of the current investigation was to conduct several meta-analyses in order to synthesize and combine the information regarding the associations between the FFM and BJW measures. As predicted, a negative relationship was found between BJW and neuroticism, and positive relationships were found between BJW and extraversion and agreeableness. In addition, neuroticism and extraversion had a stronger association with personal than with general BJW.

The findings display an almost medium-size association (Cohen, 1988) between BJW and neuroticism, indicating that the more a person believes that the world is a just place, the higher his or her emotional stability will be, and vice versa. Although no causal direction can be deduced, this finding fits well with the notion of BJW acting as a coping mechanism and a buffer against the harsh realities of life (Furnham, 2003), thus decreasing anxiety and depression (Lipkus et al., 1996), highly associated with neuroticism (Roelofs, Huibers, Peeters, & Arntz, 2008). Neuroticism might also inhibit the development of BJW, since anxiety hinders developing a notion of an orderly and stable environment, which forms the basis for a just world perspective (Lerner & Miller, 1978). Finding an increase in BJW after

treatments of generalized anxiety disorder (Hoge, Ivkovic, & Fricchione, 2012) would support this causality, while its absence would favor the former explanation.

In accordance with the second hypothesis, higher levels of extraversion were associated with a stronger just world belief. Aside from having a facet of positive emotions, extraversion depicts an excitement-seeking, active, assertive, and talkative personality (McCrae & John, 1992). All these are qualities directed towards the external world and based on the hidden premise that the world is a safe and fair place, which is embedded in BJW (Dalbert, 1999). Therefore, one interpretation may be that BJW enables addressing other people and taking on the vulnerability associated with sharing and self-exposure, since it provides a decreased fear of unjustified harm. Past research has found that people with high BJW had lower risk perceptions (Lambert et al., 1999), and future studies should investigate whether the link between BJW and extraversion is mediated by a decreased feeling of vulnerability. An opposite interpretation employs learned experience, and has two non-excluding aspects: either extraverted individuals are encouraged for their outgoing nature as children, thus facilitating a sense of a positive and fair world; or they try to actively affect the environment around them and discover that their actions bear results, thereby incorporating another variable related to BJW: locus of control (Rubin & Peplau, 1975).

Agreeableness involves altruism and caring characteristics, as opposed to hostility, indifference, and jealousy (Digman, 1990). Sometimes described as "friendly compliance" (Digman & Takemoto-Chock, 1981), many of its qualities rely on mechanisms similar to those on which BJW is based, such as trust (Zuckerman & Gerbasi, 1977). Therefore, one possible explanation for the positive association between agreeableness and BJW suggests that trust is an influential precursor of both personality dimensions. While causality cannot be determined, another possible explanation is based on the reciprocity norm (Gouldner, 1960), which implies that agreeableness invites similar reactions from others, thereby creating a safe and trusted environment, necessary for the development of BJW. By contrast, believing the world is *unjust* can lead to mistrust in other people, resulting in hostile and unfriendly behavior. In addition, a just world asserts that good people are rewarded and bad people are punished (Rubin & Peplau, 1975), explaining why people with high BJW, concerned with their *own* fate, are more inclined to help others (Zuckerman, 1975). Therefore, BJW may elicit agreeable and altruistic behaviors intended to increase the individual's positive outcome and "good fate" (Dalbert, 1998). However, A phenomenon from the just world literature that seems to challenge this relationship is victim blaming and derogation (for reviews, see Furnham, 2003; Furnham & Procter, 1989; Lerner & Miller, 1978). These contradicting findings might represent different aspects of the relationship between agreeableness and BJW. They can also explain its small effect size, by suggesting that the direction and strength of the association varies according to specific contexts, such as the stability of the situation (Miller, 1977) or the ability to alter a perceived victim's fate (Lerner & Simmons, 1966).

Neuroticism and extraversion, Eysenck's (1947) original "Big Two" personality dimensions, had stronger associations with personal than with general BJW, while the association between agreeableness and BJW was almost identical when using

either the general or personal version. The higher associations between assessments pertaining to the self are compatible with the literature in the field (Bègue & Bastounis, 2003; Lipkus et al., 1996; Sutton & Douglas, 2005). However, since agreeableness includes caring for others as well as conformity and harmony (Digman, 1990), a just world for others is as relevant as a just world for the self, leading to an equal level of association.

Limitations

While meta-analysis is a powerful tool for synthesizing data and achieving insight regarding true effect sizes, it suffers from a well-known problem labeled publication bias, where published studies have larger effect sizes than unpublished ones (Lipsey & Wilson, 1993). Since most of the studies on which the current analyses relied were from published articles, the summary effect sizes might be overestimated. However, an advantage of this research is that most studies included in it were not primarily concerned with the associations of current interest, and thereby reported them regardless of magnitude or significance. In addition, various authors were contacted and a wide range of search engines was used, which uncovered three previously unreported results. Hence, it is likely that the summary effects would remain stable even with the addition of several unpublished results. Rosenthal's (1979) fail-safe calculations also indicate that even a large number of unpublished null results would not disprove the predicted associations. The exception is the fail-safe *N*'s regarding the relationships between agreeableness and BJW, which also correspond to a small effect size (Cohen, 1988), suggesting a larger pool of studies is needed in order to attain a more precise estimate.

Recently, a six-factor model of personality has been suggested: the HEXACO model (Ashton & Lee, 2007). Its unique Honesty–Humility factor, which involves fairness, is expected to be highly correlated with the BJW. In addition, the factors included in personality models are composed of different facets (Digman, 1990), which seem to be similar to the BJW in level of abstraction. For example, although BJW was associated with extraversion, the just world literature might predict a relationship with its "Positive emotion" facet, but not necessarily with "Excitement-seeking". Further research is needed in order to determine the exact facets associated with the BJW.

Future meta-analyses should explore potential moderators of the relationships uncovered, which were not examined in the current analysis due to the scarcity of appropriate data. One of them might be the questionnaire type within each BJW form, although the high correlations between the general BJW scales (Lipkus et al., 1996) suggest that variations among them may be of minor influence. Two other promising moderators are gender and using questionnaires measuring either just or unjust world beliefs. For instance, BJW might increase self-efficacy (Correia & Dalbert, 2007), and thus decrease neuroticism. However, higher emotional stability seems to be of greater importance for women in predicting self-efficacy (Schmitt, 2008), leading to different predictions of the association between BJW and neuroticism according to gender. In addition, Heaven and Connors (1988) found a

significant correlation among women between belief in an *unjust* world, but not BJW, and neuroticism. They suggested that the cautiousness associated with higher introversion might manifest itself among women as a view of the world being unjust, thus attenuating negative events and allowing being pleasantly surprised when the world appears just. However, although the correlation between unjust world beliefs and neuroticism among men was not significant (Heaven & Connors, 1988), its magnitude exceeds that of the relationship between BJW for others and neuroticism found in the current meta-analysis, indicating the possibility of such an association.

Conclusion

The current synthesis revealed relationships between BJW and neuroticism, extraversion and agreeableness, consolidating important links between elements predicting unique aspects of human behavior. Future just world research would benefit from incorporating these personality factors, thus ensuring the existence of effects beyond their explanatory capabilities. In addition, the stronger associations with personal as opposed to general BJW support the assignment of specific BJW measures to certain themes, adding to the growing literature regarding their utility and distinction. Hopefully, the current findings will make a meaningful contribution to a better understanding of the relationships between BJW and different dimensions of personality.

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