



IMPLICIT DESERVINGNESS: IMPLICIT ASSOCIATION TEST FOR BELIEF IN A JUST WORLD

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ABSTRACT

The present research aimed to develop and produce evidence of the validity of an Implicit Association Test (IAT) for BJW. Two studies were developed to achieve this objective. Study 1 tested the convergent validity of a preliminary version of an IAT with an explicit measure (Global Belief in Just World Scale). The sample consisted of 119 participants who took part via the internet. After adjustments of the preliminary version, two IATs were developed, one for the general dimension (G-IAT) and another for the personal dimension of BJW (P-IAT). Both implicit measures and the explicit BJW measure were applied to 139 participants in a study conducted online. Both IATs demonstrated satisfactory psychometric properties and only the G-IAT correlates with the GBJWS as hypothesized.

Keywords:

Belief in a Just World; Implicit Association Test; Indirect measures; Implicit processes.

RESUMO

A presente pesquisa teve como objetivo desenvolver e apresentar evidências de validade do Teste de Associação Implícita (IAT) para a CMJ. Dois estudos foram desenvolvidos para alcançar esse objetivo. Estudo 1 testou a validade convergente de uma versão preliminar do IAT com uma medida explícita (Escala Global de Crenças no Mundo Justo). A amostra foi composta por 119 participantes que responderam ao estudo pela internet. Após ajustes na versão preliminar, dois IAT's foram desenvolvidos, um para a dimensão geral (G-IAT) e outro para a dimensão pessoal da CMJ (P-IAT). Ambas medidas implícitas e explícita de CMJ foram aplicadas em 139 participantes em um estudo conduzido online. Ambos IATs demonstraram propriedades psicométricas satisfatórias, mas somente o G-IAT, como hipotetizado, se correlacionou com a EGCMJ.

Palavras chaves:

Crenças no Mundo Justo; Teste de Associação Implícita; Medidas indiretas; Processos implícitos.

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A long tradition of research in psychology has shown that people cannot believe in a world governed by random reinforcements (Lerner & Simmons, 1966). Belief in a just world works, therefore, as an adaptive psychological mechanism (Lerner & Miller, 1978), which permits the individual to maintain the sense of control, personal invulnerability, as well as confidence in the future (Furnham, 2003) by assuming that there is a connection between effort and outcome. In this way, it is assumed that people get what they deserve and deserve what they get (Hafer & Rubel, 2015; Lerner, 1980). However the BJW is not necessarily a conscious process (Lerner, 2003) requiring studies investigating its implicit dimension. The present study contributes to research on the implicit dimension of the BJW and aims to develop and produce evidence of the validity of an Implicit Association Test (IAT) for measuring the individual differences of BJW.

Direct and Indirect Measures of the Individual Differences of the BJW

The first studies on the BJW were developed from an experimental design (Lerner, 1965; Lerner & Simmons, 1966). Later on, the BJW came to be understood as a dispositional trait, emphasizing the development and use of measures of individual differences. These instruments intend to measure different facets of BJW (Furnham, 2003), in particular, a general dimension (just-world beliefs for others) and a personal dimension of BJW (just-world beliefs for the self) (Dalbert, 1999; Lipkus, Dalbert, & Siegler, 1996). Lipkus et al. (1996) considered that the instruments available to measure the BJW did not provide a suitable comprehension if the evaluation of justice referred to the individual himself or to the others in general, which could have conceptual and empirical implications. Based on the evidence found in the literature of attributional biases, the authors argue that people judge themselves and others differently as in the case of judging a result as just if it complies with their own interest, but judge it as unjust if it complies with others' interest. This way, it is indispensable to distinguish the global BJW to the personal BJW. The distinction has been empirically corroborated, as the dimensions tend to relate to different phenomena. Whereas the global BJW predicts negative social attitudes, such as secondary victimization (Correia & Vala, 2003; Mendonça, Gouveia-Pereira, & Miranda, 2016), the personal BJW is related to psychological well being and altruism (Bègue, Charmoillaux, Cochet, Cury, & De Suremain, 2008; Dalbert, 1999). Despite the development of different scales and their empirical contributions, self-report instruments for measuring BJW are criticized. The statements from the scales are, when consciously evaluated, considered difficult to accept as they are counter-normative (Lerner & Goldberg, 1999; Lerner & Miller, 1978), being influenced by social desirability, at least in the instruments that evaluate the general dimension of BJW (Testé & Perrin, 2013).

But it must be remembered that the BJW statements are essentially counter-normative in the sense that strong agreement would indicate an unrealistic, naive, child-like faith that people always deserve what they get. So one can expect to find a relatively low general level of public agreement with these items, and the empirical associations will by and large be based upon relative degrees of disagreement and marginal acceptance (Miller & Ratner, 1996 as cited by Lerner, 1998, p. 263).

Furthermore, BJW can be understood as a preconscious phenomenon (Lerner, 2003), which is not necessarily entirely accessible to consciousness. It means that self-report measures only evaluate one part of BJW: the conscious and controlled dimension. According to Lerner, the preconscious (or automatic) dimension of BJW involves spontaneous emotional reactions to a victim due to the thought that "good things happen to good people and bad things happen to bad people." Although people are not aware of this thought, it would influence the reaction to the victims. According to the author, the fact that people are not able to predict other people's negative attitudes when they are facing an innocent victim (Simmons & Piliavin, 1972) is evidence that the BJW cannot be accessible through introspection.



Although some studies have developed and used indirect strategies for measuring BJW, such as subliminal priming (Hafer, 2000; Murray, Spadafore, & McIntosh, 2005) and eye-tracking (Callan, Ferguson, & Bindemann, 2013), these measures did not evaluate individual differences of BJW as a disposition but rather evaluated a situational threat to BJW. Hafer (2000), for example, proposes an adaptation of the Stroop test. The measure consists in the evaluation of two groups of words, one with terms related to justice (e.g. justice, fair and right) and the other with neutral words (e.g. telephone, wood and glass). The words are displayed as a subliminal priming in a dark screen followed by a mask (a set of 8 asterisks) to prevent post-retinal effect. The task consists in the answer to the perceived color, and the dependent variable was the time to perform the task. The task should be held after the presentation of a victimization scenario that would threaten the BJW. The author found that in threatening situations to BJW the latency for the identification of the words related to justice is greater than for neutral words.

Since we have found only indirect situational measures in the literature but not succeeded in finding any dispositional measure, this study aims to present evidence of validity of an Implicit Association Test (IAT) for measuring the individual differences of BJW, in order to access the preconscious dimension of this construct.

Implicit Association Test

The implicit association test (IAT) (Greenwald, McGhee, & Schwartz, 1998) has been highlighted among the indirect measures, being the most frequently cited implicit measure in recent years (Nosek, Hawkins, & Frazier, 2011). The IAT assesses the strength of the association between concepts by measuring latency and the number of correct answers during the task. Two groups of categories (e.g., black and white; positive and negative) are used. The task consists of identifying which category the stimulus belongs to (e.g., pictures of white and black people are shown and the participant is asked to classify in which category the picture belongs to). It is presumed that if the performance of the participant is better (more correct answers and smaller latencies) when two concepts are paired (white + positive and black + negative), that participant has a stronger association between the concepts (in this case, a positive attitude toward white people when compared to black people) (see Greenwald, Nosek, & Banaji, 2003, for more details about the test).

The IAT is criticized for its validity. The association task would be influenced by factors such as word use frequency (or standardization of the images), rhymes, cultural familiarity with the evaluated categories, which makes it have a significant source of error variance. Furthermore, it is questioned if the IAT would be a measure of individual attitude or if, in fact, its result would represent an answer in accordance to a cultural pattern of socialization (see Fiedler, Messner, & Bluemke, 2006, for a review of some criticism of the IAT). Despite the criticism, the IAT is the indirect measure with the best psychometric properties. In comparison with seven other implicit measures, IAT demonstrated better psychometric properties when conjunctly evaluating internal consistency, sensitivity in detecting known differences among groups, relationship to other implicit measures and to explicit ones (Bar-Anan & Nosek, 2012).

Although self-report instruments bring important empirical contributions to the comprehension of BJW, once we accept the understanding of BJW as a process that can escape conscious judgment, studies that seek to develop indirect measures for assessing individual differences in BJW become relevant. The aim here was to present evidence of validity of the IAT as a measure of individual differences in BJW. In order to accomplish this objective, two studies were conducted. Study 1 tested the convergent validity of a preliminary version of an IAT with an explicit measure. After improving the first version of the instrument, two new IATs were developed for Study 2, another one for global BJW and the other for personal BJW. Once again we tested the convergent validity of the IATs with an explicit measure. In addition to the psychometric evidence about the IAT it also aimed to compare the levels of the implicit and explicit BJW, to obtain evidence of the relevance of considering those two dimensions of the construct.

Study 1

Method

Participants

One hundred and nineteen people participated in Study 1, but four were excluded as they did not fully answer the IAT (e.g., Greenwald et al., 2003). From the 115 participants, 113 indicated their gender (68.10% female and 31.90% male), and their ages ranged from 14 to 63 years ($M = 26.91$; $SD = 8.88$). The education level ranged from incomplete elementary to master's degree, and the majority of the sample consisted of undergraduate (41.70%) and graduate (27.00%) students.

Measures

For the development of the IAT, two categories were chosen: “deservingness,” emphasizing the theoretical premise that people get what they deserve and deserve what they get; and “unpredictability,” since, as assumed by theory, BJW works as a psychological mechanism that avoids the sense of personal vulnerability, serving as a defense against the idea that the world is unpredictable and governed by random events. These terms seem more appropriate than “justice” and “injustice” or a similar term. There is evidence that the belief in unjust world is a unique individual difference and not just the reverse endorsement of justice (Dalbert, Lipkus, Sallay, & Goch, 2001).

We also include “positive” and “negative” as categories. Lane, Banaji, Greenwald, and Nosek (2007) recommend these attributes when the researcher’s interest is to measure the general preference for a certain category. Therefore, this version of the IAT refers to general BJW (G-IAT).

For the construction of the G-IAT, only semantic stimuli were used. To define these stimuli, the Just World Scale (JWS) (Rubin & Peplau, 1975) and the adapted version in Portuguese (Gouveia, Pimentel, Coelho, Maynard, & Mendonça, 2010) of The Global Belief in a Just World Scale (GBJWS) (Lipkus, 1991) were examined. After this examination, eleven stimuli related to each category were chosen. The stimuli selected were those directly used in the scales, as well as synonyms that were found in Portuguese dictionaries. Then, we asked to native Portuguese speakers to evaluate the level of relationship of each of the 22 terms with its respective target category. Seven stimuli that related best to each category were selected (deservingness: merit, effort, justice, achievement, fairness, competence, and reward; unpredictability: uncertain, unexpected, uncontrollable, undetermined, random, doubtful, and fortuitous). The stimuli used for the categories “positive and negative” were selected from a list of terms classified according to their norms of valence for the Portuguese language (Oliveira, Janczura, & Castilho, 2013).

As the explicit measure of BJW, the Portuguese version of the GBJWS (Gouveia et al., 2010) was used, which presented a good reliability indicator ($\alpha = .71$) in the adaptation study. The scale demonstrated a suitable index of reliability in the present study ($\alpha = .82$).

Procedures

Data collection was conducted completely online using Inquisit software, version 4.0. The link was disseminated through social network websites and contacts via e-mail. Upon choosing to participate in the study, the participant had to answer the IAT, the GBJWS, and lastly, supply some socio-demographic information. To calculate the D score, trials with a latency lower than 400 milliseconds or higher than 10,000 milliseconds were excluded (Greenwald et al., 2003).

The studies comply with the current laws of the country in which they were performed and with the ethical standards of research as indicated by the American Psychological Association (APA). All participants consented to participate and were guaranteed confidentiality and privacy of information.



Results

Implicit and explicit measures assess dimensions of a construct that despite being distinct, are related, and the comparison between the measures is one of the parameters used in the development of indirect measures (Bar-Anan & Nosek, 2012). In order to compare the measures, the IAT and GBJWS scores were, in the present study, converted to a standardized scale that varies from 0 to 4. Higher scores in both measures indicate higher BJW. Through the IAT, an automatic preference for deservingness ($M = 2.73$, $SD = .39$) was identified. The explicit measure, for its part, indicated that participants do not consciously present high levels of BJW ($M = 1.56$, $SD = .65$); the difference between the means was significant, $F(1, 110) = 235.48$, $p < .001$, $\eta^2p = .68$. To test the relationship between the measures, a Pearson correlation test was conducted and no significant results were found, $r = -.13$, $p = .159$. Additionally, an internal consistency analysis for IAT was done, and a Cronbach's alpha of 0.61 was identified, lower than what is usually found in the literature (Nosek, Greenwald, & Banaji, 2007).

In order to verify the adequacy of the stimuli used for each category, ANOVAs were conducted, comparing the latency of each stimulus with the other items from its own category. For the category "unpredictability," significant differences between the items were found, $F(6, 5193) = 4.81$, $p < .001$, $\eta^2p = .006$. In a Bonferroni post-hoc analysis, it was verified that the term "fortuitous" presented high latency compared to the majority of the items in its category. For the category "deservingness" there was no significant differences.

Discussion

The purpose of Study 1 was to present evidence of the validity of the IAT as a measure of BJW individual differences. Additionally, it also aimed to compare the levels of the implicit and explicit BJW, to obtain evidence of the relevance of considering those two dimensions of the construct. The pattern of results indicates that participants implicitly presented just-world beliefs without expressing high BJW scores in the explicit measure. This pattern of results seems to corroborate the understanding of BJW as a preconscious phenomenon, not entirely accessible to consciousness (Lerner, 2003).

In spite of all this evidence, the preliminary version of the G-IAT demonstrated some limitations. The absence of correlation between the implicit and explicit measures, as found in Study 1, is not uncommon in the literature (Nosek et al., 2007). However, Fleischhauer et al. (2013) point out that the correlation should present at least a positive direction, since the measures refer to the same construct. Besides, the internal consistency of the measure was below the usual pattern found in the literature. An inspection of the latency, considering each stimulus in relation to the others from its category, indicated that the term "fortuitous" differed from the others, which could have contributed to the limitations of the preliminary version.

Study 2

Considering what was found in Study 1 and its limitations, Study 2 sought to improve the preliminary version of the G-IAT and to develop a version of the personal dimension of BJW. The literature on the development of indirect measures has suggested that is necessary to test the convergent validity with other indirect measures (Lane, Banaji, Nosek, & Greenwald, 2007). Considering the absence of indirect dispositional measures of BJW in the literature, our rationale was to develop a new version of the IAT to measure its personal dimension, due to conceptual and empirical distinctions presented in the literature, in which two facets of BJW are described: just-world beliefs for the self and for others (Lipkus et al., 1996). Considering this distinction, we hope to reach more evidences of validity of the G-IAT through the test of convergence with the new implicit measure of personal BJW (P-IAT) and the explicit measure. Our hypothesis was that only the IAT for the global dimension of the BJW would positively correlate to the GBJWS (The Global Belief in a Just World Scale) when compared to the IAT

for the personal dimension of the BJW (P-IAT). We also predict that the two indirect measures will be positively correlated, since other studies indicate this pattern of relationship between the dimensions of BJW, at least when measured by direct measures (Dalbert, 1999; Modesto, Figueredo, Gama, Rodrigues, & Pilati, In press).

Method

Participants

One hundred and thirty-nine people participated in Study 2, but six of them were excluded, following the same criteria of Study 1. Of the 133 participants, 119 fully answered the research questions, 118 indicated their gender (69.50% female and 30.50% male), and their ages ranged from 18 to 66 years ($M = 28.56$; $SD = 10.80$). The education level varied from incomplete elementary to PhD; the majority of the sample was undergraduate (41.53%) or graduate (24.58%) students.

Measures

Two IATs adapted from the preliminary version tested in Study 1 were used for measuring BJW. The first IAT was similar to the preliminary version, except for the removal of the term “fortuitous,” due to its high latency, and also for the removal of the term “reward,” which was done in order to keep the same number of stimuli per category. This term was selected randomly for removal because all the other terms from the category “deservingness” seemed adequate in the analysis of Study 1. The categories “positive” and “negative” were maintained, and it is presumed that this IAT (G-IAT) refers to general BJW, as it evaluates a general preference of the concept of deservingness. The second IAT (P-IAT) used the same stimuli from the modified version and the attributes “me” and “not me.” The decision to use these terms was taken so that individuals could do an evaluation of deservingness about themselves, regarding their self-concept, which would approximate this IAT to personal BJW. The choice about the term “not me” was made based on evidence that this terminology is more adequate than the term “others,” since the evaluation of “others” is too general due to ambiguous mental representation of the category “others” (Fleischhauer, Strobel, Enge, & Strobel, 2013). As occurred in Study 1, the Portuguese-adapted version of the GBJWS once again demonstrated suitable reliability ($\alpha = .84$).

Procedures

Study 2 was developed and disseminated in the same way as Study 1. Those who decided to participate in Study 2 answered an initial IAT and then had to answer the explicit measure, followed by a second IAT, and finally evaluate the scenario and provide socio-demographic information. A counterbalancing strategy was used in which 67 participants began by answering the G-IAT, while 66 participants began by answering the P-IAT. This strategy was used in order to avoid the learning effect bias over the second IAT results.

Results

The same criteria used in Study 1 were used for the composition of the D score and for the standardization of the scores of implicit and explicit measures. The standardization only occurred when the objective was to compare the scores of the implicit and explicit measures. For the remaining analysis, the original scores were used.

The counterbalancing analysis indicated that there are no significant differences between the two versions of the IATs due to their presentation order, $V = .05$, $F(2, 116) = 2.84$, $p = .063$, $\eta^2p = .05$. Both IAT versions demonstrated satisfactory internal consistency, with a Cronbach’s alpha of .70 for the G-IAT and .73 for the P-IAT.

As occurred in Study 1, higher levels of BJW were found when it was assessed through indirect measures (G-IAT: $M = 2.79$; $SD = .42$; P-IAT: $M = 2.54$; $SD = .38$) than when assessed through the explicit measure ($M = 1.44$, $SD = .72$). The differences between the measures were significant when a MANOVA was conducted using Pillai’s trace, $V = .78$, $F(2, 116) = 200.05$, $p < .001$, $\eta^2p = .78$.



Multiple comparisons through the Bonferroni test identified differences among all measures, at a level of $p < .001$. The comparison between the scores of the implicit and explicit BJW can be seen in Figure 1.

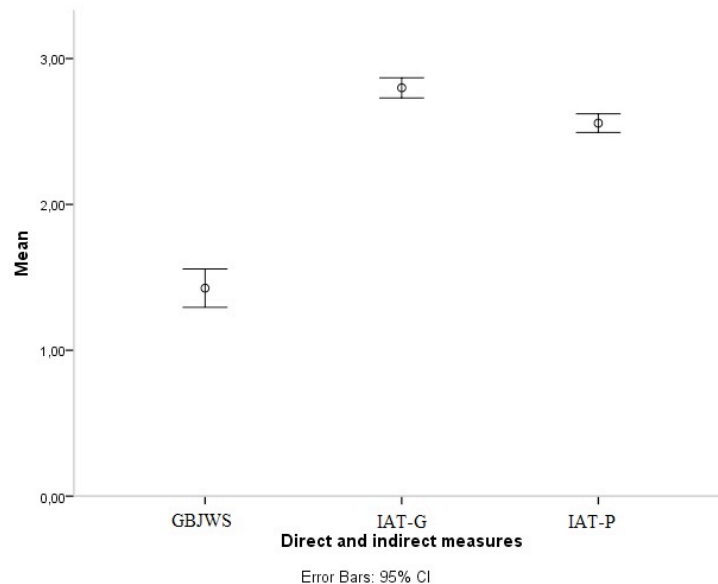


Figure 1. Error bars diagram for the mean differences of implicit and explicit measures

A Pearson correlation indicated a positive relationship between implicit measures, $r = .42$, $p < .001$. However as hypothesized only the G-IAT demonstrated a significantly positive correlation with the GBJWS, $r = .19$, $p = .033$. As for the P-IAT, the correlation was not significant, $r = .10$, $p = .266$.

Discussion

Study 2 aimed to present evidence of validity of the IAT to measure BJW. The two implicit measures demonstrated satisfactory internal consistency, in accordance with what is recommended in the literature (Nosek et al., 2007), which is indicative of the adequacy of IAT for measuring the individual differences of BJW.

As was verified in Study 1, the participants presented higher levels of BJW when assessed through indirect measures, which reaffirms the theoretical understanding that BJW cannot be fully accessible to conscious judgment (Lerner, 2003).

The differences between general and personal BJW found in self-report instruments were also identified in the implicit measures. The participants demonstrated higher levels in G-IAT than in P-IAT, which differs from the pattern that is usually found in self-report measures. This may have been due to the social desirability associated with explicit measures that evaluate the general dimension of BJW (Testé & Perrin, 2013). Additionally, only the implicit measure (G-IAT) that evaluated the general BJW correlated positively with GBJWS, and that was another indicator of the importance of considering the two facets of BJW.

Conclusions

The present study contributes to a better understanding of the individual differences of BJW. First, it offers instrumental contribution as it presents evidence of validity of two IAT for measuring BJW. In this way, it joins a set of other studies that indicate the importance of using indirect measures for this construct (Hafer, 2000; Murray et al., 2005). Besides the instrumental contribution, some theoretical and conceptual contributions are also brought out. The results corroborate the understanding that BJW cannot be entirely accessible to consciousness (Lerner,

2003), on the basis of the high levels of BJW found through indirect measures when compared to the explicit measure. Another theoretical and conceptual contribution refers to the verification that the general and personal BJW seem to be maintained even when they are evaluated through an indirect means. This result indicates the importance of developing a new set of investigations that compare the predictions of the general and personal BJW, also when evaluated in an indirect way. Despite the satisfactory psychometric parameters, it is necessary to continue the measures improvement. One necessary action is adapting it to other cultures, seeking to produce cross-cultural evidence of the validity of the IAT as a measure for the preconscious dimension of the BJW. In a cross-cultural study with the explicit measure, in a comparison among twelve countries, differences concerning the extent of the acceptance of a just world belief in relation to cultural factors were found, such as the positive correlation with power distance, for example (Furnham, 1993). Therefore, it is necessary to establish similar cultural comparisons for the indirect measure also. We consider these measures as an important contribution to the development of the BJW theory, considering the possibility of working with a combined composite of implicit and explicit individual differences for BJW measurements.

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