Journal of Research in Personality 44 (2010) 677–683

Contents lists available at ScienceDirect

Journal of Research in Personality

journal homepage: www.elsevier.com/locate/jrp

Justice sensitivity and source memory for cheaters

Raoul Bell *, Axel Buchner

Institut für Experimentelle Psychologie, Heinrich-Heine-Universität Düsseldorf, 40225 Düsseldorf, Germany

ARTICLE INFO

Article history:
Available online 9 September 2010

Keywords:
Justice sensitivity
Context memory
Cooperation
Reciprocal altruism
Direct reciprocity

ABSTRACT

The present experiment examines how sensitivity to injustice from the observer perspective influences memory for faces associated with descriptions of cheating, trustworthy, or irrelevant behavior. The source memory advantage for faces of cheaters observed in previous studies, that is, better memory for the cheating context in which these faces were encountered, was replicated in a group with high observer sensitivity, but not in a group with low observer sensitivity. The results show that individual differences in the sensitivity to injustice lead to differences in cognitive processing of injustice-related information. It is concluded that the concept of justice sensitivity may provide a useful tool for the examination of the cognitive–emotional mechanisms underlying social exchange.

1. Introduction

People differ in their emotional sensitivity to the perception of unfair or immoral actions. Individual differences in the emotional sensitivity to injustice can be assessed using the justice sensitivity (JS) scale (Schmitt, Gollwitzer, Maes, & Arbach, 2005) by asking people about their emotional reactions to the experience of injustice. The high stability of JS scores show that justice sensitivity can be considered a personality trait (Faccenda, Pantaleon, Bois, & Schmitt, 2008; Schmitt et al., 2005). The JS scale consists of three subscales based on the assumption that injustice can be experienced from three different perspectives (Schmitt et al., 2005, 2009). First, in the role of the *observer*, one may witness unfair interactions between third parties without being personally involved. Second, in the role of the *perpetrator*, one may benefit from the unfair treatments of others. Third, in the role of the *victim*, one may suffer injustice from others. Sensitivity to injustice may differ depending on which of the three perspectives is taken. People scoring high in observer sensitivity ($JS_{Observer}$) are morally outraged by witnessing the unfair treatment of third parties. Those scoring high in perpetrator sensitivity ($JS_{Perpetrator}$) are conscious about the moral implications of their own actions and feel guilty when they benefit from the mistreatment of others. People scoring high in victim sensitivity (JS_{Victim}) are concerned about being treated worse than others and get angry when they feel they are not getting their fair share.

Correlations with other personality constructs led to the conclusion that both $JS_{Observer}$ and $JS_{Perpetrator}$ reflect genuine moralistic concerns, whereas JS_{Victim} reflects a mixture of moralistic and egoistic concerns. For instance, $JS_{Observer}$ correlates positively with prosocial dispositions such as empathy, social responsibility, and agreeableness (Schmitt et al., 2005). Several studies examined the relationship between justice sensitivity and social and antisocial behaviors in social-dilemma games as well as in real life (Fetchenhauer & Huang, 2004; Gollwitzer, Rothmund, Pfeiffer, & Ensenbach, 2009; Gollwitzer, Schmitt, Schalke, Maes, & Baer, 2005). JS_{Victim} was found to be associated with antisocial and egoistic behavior. $JS_{Observer}$ and $JS_{Perpetrator}$, in contrast, were found to be positively correlated with cooperative behavior. People scoring high in $JS_{Observer}$ and $JS_{Perpetrator}$ made fair offers in the dictator game (in which no retaliation has to be feared). However, $JS_{Observer}$ and $JS_{Perpetrator}$ were also positively correlated with rejection of unequal offers in the ultimatum game (Fetchenhauer & Huang, 2004). In this game, a player is required to share a certain amount of money with another player. He is free in deciding how much money he keeps for himself. However, if the other player rejects his offer, both players get nothing at all. Thus, these findings are consistent with the assumption that $JS_{Observer}$ and $JS_{Perpetrator}$ are associated with an increased willingness to cooperate, but also with a readiness to retaliate violations of fairness.

There are fewer studies examining the relationship between justice sensitivity and cognitive processing. At a theoretical level, it has been suggested (Gollwitzer et al., 2005, 2009) that justice sensitivity may be the "psychological manifestation" of the cheater detection module proposed by social contract theory. According to this theory (Cosmides & Tooby, 1992, 2005), cooperative individuals can only be evolutionary successful if they are vigilant against the possibility of being cheated. The cheater detection module proposed by this theory consists of domain-specific reasoning mechanisms that allow the individual reliably to detect cheaters. To save the individual from exploitation in future interactions, cheater

* Corresponding author.
E-mail address: Raoul.Bell@uni-duesseldorf.de (R. Bell).

0092-6566/$ - see front matter © 2010 Elsevier Inc. All rights reserved.
doi:10.1016/j.jrp.2010.08.011

detection has to be accompanied by memory mechanisms that allow the individual to learn from previous negative experiences with cheaters (Buchner, Bell, Mehl, & Musch, 2009; Chiappe et al., 2004; Mealey, Daood, & Krage, 1996). Mealey et al. derived from social contract theory the prediction that faces of cheaters should be better remembered than faces associated with other types of behavior. Recent studies were not able to replicate their finding that faces associated with descriptions of cheating are better *recognized as having been seen before* than faces associated with descriptions of trustworthy or irrelevant behavior (Mehl & Buchner, 2008). However, it turns out that *source memory*, that is, memory for the cheating context in which these faces were encountered, is better for faces of cheaters than for other types of faces (Bell & Buchner, in press; Buchner et al., 2009). Source memory for faces of cheaters can help to avoid cheaters in social interactions and may therefore be beneficial to cooperative individuals.

A subsequent study (Bell & Buchner, 2010) showed that the source memory advantage generalizes to source memory for negative context information from a different domain. This result led to the conclusion that the source memory advantage is mediated by more general effects of emotion on memory rather than being caused by a domain-specific memory mechanism that is restricted to cheating. In another study (Bell & Buchner, in press), source memory for faces of cheaters and for faces of trustworthy persons was equally good when both cheating and trustworthy behavior elicited similarly strong emotional reactions towards the stimulus persons. The emotional mediation hypothesis received further support by an experiment showing that the source memory advantage for faces associated with disgusting contexts was modulated by the participants' disgust sensitivity (Bell & Buchner, 2010). Disgust sensitivity was assessed using an established disgust-sensitivity scale in which participants rate the experienced disgust level when reading about disgusting scenes (Schienle, Walter, Stark, & Vaitl, 2002). The source memory advantage for faces associated with disgusting behavior was larger in a group of participants with high disgust sensitivity than in a group of participants with low disgust sensitivity.

The present study examines whether the source memory advantage for faces of cheaters is modulated by justice sensitivity. As in the studies discussed above (Bell & Buchner, in press; Buchner et al., 2009; Chiappe et al., 2004; Mealey et al., 1996; Mehl & Buchner, 2008), the moral status of the faces was manipulated using descriptions of social interactions involving third parties. Thus, cheating was experienced from the observer perspective. Therefore, $JS_{Observer}$ should be most strongly related to the emotional reaction towards the stimulus faces at encoding. Furthermore, the source memory advantage for faces of cheaters should be larger in a group of participants with high-$JS_{Observer}$ than for a group of participants with low-$JS_{Observer}$.

2. Measuring source memory

A problem with ad hoc measures of source memory such as the raw number of correct source classifications is that they confound old–new discrimination, source memory, and guessing biases (Bayen, Murnane, & Erdfelder, 1996; Bröder & Meiser, 2007). For instance, the face of a previously seen cheater may be correctly classified as old because (a) the face is remembered as old and the cheating context in which it was encountered is also correctly remembered; (b) the faces is remembered as old whereas the cheating is not, but the cheating context is picked correctly by chance; (c) the face may not be recognized at all, but the person may be lucky to guess the face to be old and may also pick the correct cheating context by chance. Thus, the number of correct source classifications may increase when source memory gets better, but also when participants are biased to pick the cheater category if they remember nothing about the face.

In the present case, it is unclear whether systematic relationships between $JS_{Observer}$ and guessing biases exist, but this possibility cannot be excluded a priori. Even if $JS_{Observer}$ would not systematically bias guessing, the probability of finding differences in source memory because of individual differences in $JS_{Observer}$ would be greatly reduced if a source memory measure was used that would be heavily influenced by individual differences in old–new discrimination and bias. Fortunately, multinomial models of source memory (Batchelder & Riefer, 1990; Bayen et al., 1996) allow for the independent measurement of source memory. The model used in the present experiment—which was successfully developed and validated by Bayen et al. (1996)—is shown in Fig. 1. The model was successfully used several times to examine source memory for positive or negative context information (Bell & Buchner, 2009, 2010, in press; Buchner et al., 2009). It contains twelve free parameters, each of which represents the probability with which certain cognitive processes occur. To illustrate, parameter D_{Cheat} represents the probability of recognizing a cheater face as old. Parameter d_{Cheat} represents the conditional probability of also remembering that the face belonged to a cheater. If the source of a recognized face is not known (with probability $1 - d_{Cheat}$), it may be guessed that the face belonged to a cheater with probability $a_{CheatTrust} \cdot a_{Cheat}$, to a trustworthy person with probability $a_{CheatTrust} \cdot (1 - a_{Cheat})$, or to an irrelevant person with probability $(1 - a_{CheatTrust})$. If a cheater face is not recognized as old (with probability $1 - D_{Cheat}$), it may still be guessed, with probability b, that the face is old. For these faces, it may be guessed that the face belonged to a cheater with probability $g_{CheatTrust} \cdot g_{Cheat}$, to a cooperator with probability $g_{CheatTrust} \cdot (1 - g_{Cheat})$, or to an irrelevant person with probability $(1 - g_{CheatTrust})$. If a cheater face is neither recognized as old, nor guessed to be old (with probability $1 - b$), it is incorrectly judged to be new. Analogous statements hold for the model trees for cooperator faces, irrelevant faces, and new faces. Based on these model equations and the empirically observed sample responses to the different types of faces, the model parameters can be estimated using standard computer programs (Moshagen, 2010). The multinomial analysis does not allow for the measurement of source memory at an individual level. Therefore, we follow the approach of Bell and Buchner (2010) by using extreme group comparisons to examine the effects of $JS_{Observer}$ on source memory for cheaters.

3. Method

3.1. Participants

Participants were 64 persons (47 women), who were students at Heinrich-Heine-University Düsseldorf. Their age ranged from 19 to 48 years ($M = 25.97$, $SD = 7.04$). All participants were native German speakers.

3.2. Materials

A total of 72 facial photographs of males (256-bit, 116×164 pixel grayscales) were used. For each participant, 36 of these faces were randomly selected for presentation in the encoding phase. The pictures were randomly assigned to the three conditions. Descriptions typed below the photographs conveyed the behavioral history (*cheating, irrelevant to the cheating–trustworthiness dimension, trustworthiness*) of the person shown. The same descriptions were used as in previous studies examining source memory for cheaters (Bell & Buchner, 2009; Buchner et al., 2009). For