Personality and Individual Differences 109 (2017) 201–206

Contents lists available at ScienceDirect

Personality and Individual Differences

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

The effect of reciprocity disposition on giving and repaying reciprocity behavior

Xia Li [a,b], Panhua Zhu [b], Yue Yu [a], Jianxin Zhang [a,*], Zhen Zhang [c,*]

[a] CAS Key Laboratory of Mental Health, Institute of Psychology, Beijing, 100101, China
[b] Institute of Education, Jiangxi Science & Technology Normal University, Nanchang, 330013, China
[c] CAS Key Laboratory of Behavior Science, Institute of Psychology, Beijing, 100101, China

ARTICLE INFO

Article history:
Received 16 September 2016
Received in revised form 17 December 2016
Accepted 4 January 2017
Available online 13 January 2017

Keywords:
Reciprocity disposition
Positive reciprocity
Negative reciprocity
Reciprocity game
Reciprocal behavior

ABSTRACT

Human beings have a general tendency for reciprocity in most societies. The internalized reciprocity norm assumption suggests that reciprocity disposition would encourage reciprocity towards strangers in one-shot interactions. To verify this, we examined the predictive ability of reciprocity dispositions for giving and repaying reciprocal behaviors. A sample of college students ($N = 98$) participated in the reciprocity game in a laboratory, which comprised a prisoner dilemma game (PD) and dictator game (DG). The results indicated that reciprocity behavior occurred among strangers without face-to-face interactions. Reciprocity expectation predicted the choice of cooperation in the PD significantly. Positive and negative reciprocity dispositions had no effect on the strategy choice; however, they significantly predicted payoff allocation in the DG. Specifically, a higher positive reciprocity disposition led to more payoff allocation, while a higher negative reciprocity disposition led to less payoff allocation. In summary, strangers abide by the reciprocity norm, and the internalized reciprocity disposition exerts an influence on repaying behavior and accounts for some individual differences in reciprocity. These findings provide robust support for the internalized reciprocity norm assumption, and illustrate the process mechanism of human interaction among strangers. People may predict interpersonal interaction better through reciprocity dispositions and reciprocity valences.

1. Introduction

The social norm of reciprocity is considered a major reason for our willingness to reward kind people and punish unkind people. Gouldner (1960) proposed reciprocity as a basic tendency that can be found in most human societies throughout history, it has provided a stable mechanism for the human social system. In other words, human beings appear to have a general tendency to reciprocate. The norm of reciprocity has existed in China since time immemorial, *the Book of Songs,* written in the middle of the Spring and Autumn (roughly 771 to 476 BCE), contained the idiom "Give me a peach, I will return you a plum." Reciprocity is deeply embedded in Chinese culture, and provides an important basis for social ties in Chinese society (Chang & Holt, 1994; Yang, 1993). The universality of reciprocity norm is further supported by terror management theory: people experiencing mortality salience strive to live up to salient cultural norms and values, including the norm of reciprocity (Schindler, Reinhard, & Stahlberg, 2013).

1.1. The assumption of the internalized reciprocity norm

Reciprocity has been considered a strategic behavior for self-interest maximization. People primarily seek to benefit from their transactions with others as the rational "economic man." This "tit-for-tat strategy" has been shown to be effective for punishing defection, inducing cooperation, and yielding the best pay-offs for egoist players in repeated social dilemma situations (Axelrod, 1984; Hoffman, McCabe, & Smith, 1998). Besides, the fairness assumption maintains that people prefer fairness. People refuse to help others, and even sacrifice their own benefits to retaliate against others, instead of maximizing their own self-interests when they consider others' behavior to be unfair (Fehr & Schmidt, 1999; Rabin, 1993).

However, neither of self-interest and fairness assumptions can explain reciprocal behaviors in certain situations. For example, people will reciprocate with genetically unrelated strangers, with people they will never meet again, when reputation or material gains are small or absent (Berg, Dickeout, & McCabe, 1995; Komorita, Parks, & Hulbert, 1992; Rind & Strohmetz, 1999), and even when altruistic punishment is costly(Fehr, Fischbacher, & Gächter, 2002). There are clear individual differences in reciprocity (Gallucci & Perugini, 2000). Given these shortcomings, Perugini, Gallucci, Presaghi, and Ercolani (2003) proposed the internalized reciprocity norm assumption. The social norm of

* Corresponding authors.
E-mail addresses: zhangjx@psych.ac.cn (J. Zhang), zhangz@psych.ac.cn (Z. Zhang).

http://dx.doi.org/10.1016/j.paid.2017.01.007
0191-8869/

reciprocity may lead individuals to adopt the rule as a personal norm for their own behavior. Reciprocity is conceptualized to be an individual personality tendency to reciprocate other's behavior. The reciprocity norm can be endorsed in different degrees by different individuals as an internalized social norm; therefore, individuals have different dispositions towards rewarding helping behavior or retaliating against hurting behavior. This reciprocity tendency would not only explain why reciprocity behavior is observed among strangers in situations with no apparent external reward or punishment, but also account for individual differences in reciprocity. However, there is still an insufficient amount of appropriate empirical evidence to support this assumption. Thus, we examined how internalized reciprocity dispositions affect reciprocal behavior in the current study.

1.2. Measurement of reciprocity behavior and reciprocity disposition

The assumption of the internalized reciprocity norm can be optimally tested by examining the effect of individuals' reciprocity disposition towards strangers on their actual reciprocal behavior of one-shot interactions. As reciprocity behavior is characterized as a reaction to the giver's behavior with a behavior of the same valence, Gallucci and Perugini (2000) designed a reciprocity game, comprising a simultaneous prisoner's dilemma game (PD) and a dictator game (DG), whose properties enable a clear test of the giving and repaying processes of reciprocity among strangers. Specifically, the actors develop a history of the giving interaction in the PD, which leads to positive (cooperation) and negative (noncooperation) consequences. Furthermore, because actors are told that the opponent only plays the PD game before repaying payoffs in the DG, this history is minimized to exclude the impact of adopting a strategy.

Based on the internalized reciprocity norm assumption, Perugini et al. (2003) constructed the "Personal Norm of Reciprocity" (PNR) to measure the internalized reciprocity norm among strangers by assessing reciprocity belief and reciprocity behavior disposition. Reciprocity belief refers to individual's belief in the efficacy and widespread use of reciprocity-based behavior and expectations of others' reciprocal behavior. Reciprocity behavior disposition includes positive and negative reciprocity. Positive reciprocity means the tendency to be sensitive to positive interpersonal behavior and prefer positive rewards, while negative reciprocity indicates the tendency to be sensitive to negative interpersonal behavior and prefer negative sanctions. The internalized reciprocity norm can be reliably and validly measured through the PNR (Perugini et al., 2003). Although other measures of positive and negative reciprocity beliefs or inclinations have been developed (Dohmen, Falk, Huffman, & Sunde, 2006; Eisenberger, Lynch, Aselage, & Rohdieck, 2004), they are used to assess reciprocal dispositions towards everyone—both strangers and familiar individuals—without distinction. When an individual has a closer relationship with whom they are engaging in a reciprocal interaction, it becomes more difficult to exclude reciprocity strategy for long-term expectation. As Perugini et al. (2003) noted, internalized reciprocity would lead to reciprocal behavior without necessarily being accompanied by a corresponding reciprocity belief that "most people would do it." Therefore, subscales assessing positive and negative reciprocity in the PNR seem more appropriate for assessing reciprocity dispositions without strategic value.

1.3. The current study

We explored whether reciprocity disposition predicted reciprocity behavior in the reciprocity game. Past researchers mainly focused on reciprocal reactions to givers' behavior; however, reciprocity is essentially an interaction of giving and repaying among different persons, with this being especially obvious in direct reciprocity between two persons. Thus, we explored not only the effect of reciprocity dispositions on repaying behavior, but also on giving behavior. Meanwhile, reciprocity expectation and valence are considered important predictors of individuals' reciprocity behavior (Gallucci & Perugini, 2000; Velez, 2015). Therefore, we created a within-subjects experimental design for the giving process, with within-subjects independent variables of positive reciprocity disposition, negative reciprocity disposition, and expectation for cooperation, and a dependent variable of participants' selection of cooperation or non-cooperation strategy in the PD. Then, we created a mixed experimental design for the repaying process, with within-subjects independent variables of positive and negative reciprocity dispositions, a between-subjects variable of reciprocity valence (cooperation versus non-cooperation in PD), and the payoff allocation in the DG as the dependent variable. Meanwhile, considering that the game's purpose was to maximize monetary reward, we controlled for several variables that might influence payoff allocation: social class, monthly personal expenses, and social desirability (Gallucci & Perugini, 2000). Ultimately, two hypotheses were proposed:

H1. Positive reciprocity disposition and cooperation expectation will positively predict the choice of cooperation in the PD, while negative reciprocity disposition will negatively predict the choice of cooperation.

H2. Positive reciprocity disposition and the feedback of cooperation in the PD predict more payoff allocation in the DG, while negative reciprocity disposition and the feedback of noncooperation predict less allocation.

2. Method

2.1. Participants

Participants comprised 98 undergraduate and postgraduate students from different faculties at a university in Jiangxi Province, China. Forty-two of the students were men and 56 were women. Students' ages ranged from 17 to 27 years ($M_{age} = 20.41$, $SD = 2.13$ years). Participants indicated their social class using a 5-point Likert scale ranging from *lower class* to *upper class*: 5 participants assessed themselves as being from lower social class, 54 from lower middle class, 36 from middle class, and 3 from upper middle class (none were from upper class). Additionally, participants evaluated their personal monthly expenses on a four-point scale: 47 reported lower than 1000¥, 46 reported 1001–2000¥, and 5 reported 2001–3000¥ (none reported over 3000¥, ¥1 = $0.16 US dollars).

2.2. Procedure

The procedure of the reciprocity game was very like that used in Gallucci and Perugini (2000); however, we made some changes to the payoff matrix and procedure materials. Following informed consent, all the students who voluntarily participated were told that they would be rewarded in accordance with their performance in the game. Thirty and 68 participants took part in two identical experimental sessions. After entering the experimental room, each participant immediately selected a number at random. Participants were then told that they had been randomly paired with another participant via code number matching (e.g., 1A–1B) in the experiment, and both would be sent to a separate room (A or B). These procedures ensured that participants in each pair were anonymous to each other and the experimenters.

Once in their separate rooms, each participant received an envelope containing standardized instructions for the two games and PD materials. They were told that the greater the payoff he/she obtained in two games among all participants, the more money he/she would be rewarded at the end of the experiment. Next, participants wrote down their code number, read the instructions for the PD, and selected one strategy (cooperation or non-cooperation) for the specified payoff matrix. The payoffs were assigned as follows: C–C (2000, 2000), D–C (2500, 1000), C–D (1000, 2500), D–D (1500, 1500) (i.e., C indicates cooperation, D indicates non-cooperation). Following strategy selection,