



Favor transmission and social image concern: An experimental study[☆]



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ABSTRACT

This paper investigates how social image concern affects favor transmission in one-shot interactions. We conduct a laboratory experiment in which a provider gives a favor to a recipient, who can then only return the favor to an anonymous third party beneficiary. We find that when the recipient's behavior is observable by the provider – e.g., there exists social image concern – the recipient's repayment increases by 25%. To investigate the possible channels of the effect, in our design the provider has the option to send a costly request to the recipient, asking for a favorable treatment of the beneficiary, in addition to varying degrees of social connection between the provider and the beneficiary. We show that the increase in repayment under social image concern is largely attributable to the recipient's increasing desire to meet the provider's request. On the other hand, the providers are more likely to send the request when they can observe the repayment. These results suggest that the concern for social image not only affects the amount of favor transmitted, but also has interesting and important interactions with other underlying motives.

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1. Introduction

It is widely observed that individuals do favors for others without obvious chance of receiving benefits (e.g., Forsythe et al., 1994; Berg, Dickhaut and McCabe, 1995). Typically, the person who receives a favor wants to return the favor to the original provider if conditions permit (e.g., Berg, Dickhaut and McCabe, 1995; Cox, 2004). However, sometimes the favor recipient reciprocates to a third party beneficiary in the case that there is no chance to directly reciprocate to the provider (Buchan, Croson and Dawes, 2002; Stanca, 2009). Promoting favor transmission is important because even a small amount of initial favor can trigger a chain

of pro-social behavior that is often welfare-improving (e.g., in the case of trust games). This paper investigates the conditions for successful transmission of favors in such multilateral settings.

We explore a favor transmission process in which a provider can provide a favor to a recipient, but the recipient only has the opportunity to return the favor to a third-party beneficiary in one-shot interactions.¹ Liang and Meng (2014) focus on understanding the behavior of the recipient, and establish that the social relation status between the provider and the beneficiary affect the repayment of recipients, i.e., there is social connection spillover. Besides, they also demonstrate that the active request from the provider to the recipient for a favorable repayment to the beneficiary has no significant influence on the recipient's behavior. On the basis of that study, this paper highlights the role of social image concern (Jason, Weber and Kuang, 2007; Kurzban, DeScioli and O'Brien, 2007; Anderoni and Bernheim, 2009; Hamman, Loewenstein and Weber, 2010). Specifically, we investigate whether the observability of the recipient's action – i.e., the recipient's social image concern – influences the role of social connections and request in affecting recipient's behavior.

¹ Nowak and Sigmund (1998, 2005) call the kind of indirect reciprocity we highlight as *upstream reciprocity*, which refers to how people repay the kind act to someone who did not help them before. They also analyze *downstream reciprocity*, in the sense that people receive kind acts from someone that did not get the direct help from them.

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The experiment follows the spirit of the four-person indirect investment game developed by Dufwenberg et al. (2001) and Buchan, Croson and Dawes (2002), but with some modifications. In the experiment, a provider chooses to transfer a certain amount, which would be tripled by an experimenter, to an anonymous recipient. The recipient is then randomly re-matched with an anonymous beneficiary² and decides on the amount of repayment to her. There are two variations. First, the beneficiary may have social connection to the original provider, and both she and he are informed about it. Second, upon learning the social connection status between the beneficiary and her, the provider can decide whether to send a costly request to the recipient for a favorable treatment of the beneficiary. After observing the social connection status between the provider and the beneficiary, as well as the provider's request (if any), the recipient decides the amount to return to the beneficiary.

The key treatment variable is whether the recipient's repayment decision is observable by the provider. In the Baseline Treatment, such information was not revealed. In the Image Treatment, the provider (but not the beneficiary) was informed about the recipient's amount of repayment, and the recipient knew about this fact. Since the providers and the recipients have essentially one-shot interactions in our design, there was no reputation concern, but the recipients may change their behavior if they care about maintaining a social image in the perception of the providers.

We find that when repayment information is observable by the provider, after controlling for the provider's initial transfer, the recipient's repayment increases by about 25%. Further, this increase is mostly attributable to the recipient's increasing desire to meet the provider's request. The generous providers would like to send a costly request when they can observe the repayment information.

This paper is related to several lines of research. Based on the two-person investment game, Berg, Dickhaut and McCabe (1995), Dufwenberg et al. (2001), Guth et al. (2001), Buchan, Croson and Dawes (2002), and Stanca (2009) have developed a one-shot four-person investment game, in which one sender and one receiver form a pair and two pairs form a four-person group. Instead of returning the money to one's own sender, a receiver could only repay to the other sender in the same group. These works establish the existence of indirect reciprocal behavior, even in the absence of incentives for strategic reputation building.³ However, less is explored about the behavior motives underlying the non-strategic indirect reciprocity. Liang and Meng (2014) explore whether indirect reciprocity is affected by naturally occurring social connection and by the request indicating the providers' expectations. They discover the significant effect of social connections but not provider's request. However, the finding in this paper suggests that the validity of their result relies on whether the provider can observe the recipient's repayment amount.

There is a large body of experimental literature suggesting that individual behavior would be significantly affected by the existence of an audience who passively observes their actions. For instance, the presence of audience might deteriorate the performance in an individual's task (Ariely et al., 2009; Brandts and Garofalo, 2012). In the situation of inter-personal interactions, there is evidence that people would like to be perceived by others as cooperative (Jason, Weber and Kuang, 2007; Kurzban, DeScioli and O'Brien, 2007; Anderoni and Bernheim, 2009; Rockenbach and Milinski, 2011). Hence, individual's moral cost to conduct unfair acts could

² For the sake of convenience, we will use "she" to indicate the provider and the third-party beneficiary, and "he" to refer to the recipient.

³ Using a multi-round helping game without information feedback, Engelmann and Fischbacher (2009) also demonstrate that people might indirectly reciprocate even in the absence of reputation concerns.

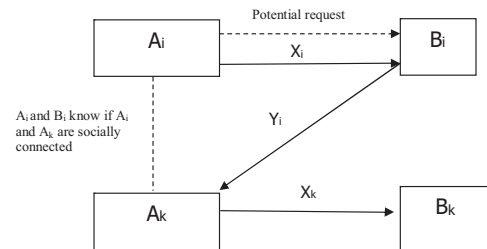


Fig. 1. Design of the Baseline Treatment.

be reduced if no one can observe his behavior. This finding has implications for the use of delegation in principal-agent relationships (Hamman, Loewenstein and Weber, 2010), the role of intermediaries in corruption (Drugov, Hamman and Serra, 2014), etc. This paper demonstrates the interesting interaction between the image concern and other behavior motives, which is to a large extent ignored in the previous works.

The remainder of this paper is organized as the following: Section 2 presents the design of experiment, Section 3 reports the experimental results, and Section 4 concludes.

2. Experimental design

There are two groups of subjects: group A plays the role of providers/beneficiaries and group B plays the role of recipients. We design a Baseline Treatment and an Image Treatment to address the role of social image concern.

In the Baseline Treatment, subjects in group A and group B receive an endowment of 30 RMB and 10 RMB, respectively. This game consists of three stages, and the structure is illustrated in Fig. 1.

Stage 1: Each subject in group A plays the role of provider and chooses a part of her endowment to transfer to a randomly and anonymously matched subject in group B. In Fig. 1, it is expressed as A_i matches with B_i , and A_k matches with B_k . B_i/B_k would receive a tripled X_i/X_k .

Stage 2: Each subject in group B is randomly re-paired with another anonymous subject in group A, e.g., B_i is re-paired with A_k . There are two possible connection statuses between the new beneficiary A_k and the original provider A_i , i.e., they are either socially connected or not. After being informed about the status of connections between A_i and A_k , A_i has the option to incur 1 RMB to send a structured request to B_i with the content "Please be kind to A_k ". A_k knows neither whether A_i has sent a request nor her social connection status with A_i .

Stage 3: Without knowing the beneficiary's transfer decision in stage 1, the matched group B subject decides how to split his total wealth between himself and the beneficiary. In the figure the amount B_i sent to A_k is denoted by Y_i . Neither A_i nor A_k could observe the amount of Y_i .

Each subject in the group A plays both the role of provider in stage 1 and that of beneficiary in stage 3, but paired with different subject B, as Fig. 1 illustrates.

The Image Treatment is almost identical with the Baseline, except that at the end of stage 3, the experimenter will inform A_i the amount of Y_i , and B_i knows that his act will be observed by A_i . However, A_k still could not observe the amount of Y_i . Therefore, in this treatment B_i may care about how the original provider A_i perceives his image.

To collect enough data at reasonable cost and to address the potential problem that subjects may need some experience to actually understand the structure of the game (Charness and Kuhn, 2010), in each session, the subjects played the same game for six periods. We ensure (the subjects also knew it) that no subject

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