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Effects of problem characteristics on the online helping behavior of shy individuals

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ABSTRACT

The present research examined how problem characteristics might influence the online helping behavior of shy individuals. Three hundred undergraduates were recruited and assessed using the College Students' Shyness Scale. According to the scores, 68 high-shy students and 68 low-shy students were selected to participate in simulated experiments designed to determine the influence of the shyness level, the presence of a foreseeable reward, the complexity of the problem, and the urgency of the problem influence online helping behavior. The results showed that (a) High-shy individuals tended to exhibit online helping behavior more for low-complexity problems and high-urgency problems than for high-complexity problems and low-urgency problems. (b) Low-shy individuals always exhibited online helping behavior less for high-complexity problems and when no reward was offered than they did for low-complexity problems and when a reward was offered. (c) High-shy individuals showed online helping behavior more than low-shy individuals did for no-reward, high-complexity problems and high-urgency problems. (d) Participants online had higher shyness scores for showing helping behavior than those offline.

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1. Introduction

Shyness is a stable personality trait that is commonly manifested in interpersonal communication. Henderson and Zimbardo (2001) suggested that shyness was a temperamental trait that referred to tension and discomfort when facing a new social environment and/or consciousness of situations in which social evaluation was taking place. Shyness can significantly reduce people's degree of participation and the likelihood of successful behavior. In interpersonal communication, a degree of shyness is normal and plays a role in facilitating interpersonal communication. However, if shyness is excessive, it affects the normal behavior of the individual and cause trouble in their study, work, and personal life (Zimbardo, 1977). Shyness is not only reflected individually in cognitive, behavioral, emotional, and physical aspects but by performance in all of these aspects combined (Henderson, 1994). In addition, such integrated performance can be apparent in daily behavior. Therefore, the present study investigated the specific

domain of behavior to determine the online helping practices of shy individuals.

Helping behavior, a crucial part of prosocial behavior, is the result of the socialization of individuals. Interpersonal communication may cause social exclusion, which can cause social pain, arouse additional negative emotions, and reduce individual prosocial behavior, particularly in a Chinese cultural setting. This is similar to the influence of shyness; therefore, the shyness level may influence online helping behavior.

Shyness and online activities are correlated (Luo, Zhou, Wei, Yuan, & Kong, 2013). A lack of self-confidence (Crozier, 1990) and social skills (Zimbardo, 1977) are the main factors that obstruct communication between shy individuals and others. However, the effect of these factors is often reduced when communication is conducted over the Internet. Research has shown that shy individuals establish and develop the satisfaction to their online relationships through online activities (Sheeks & Birchmeier, 2007). Such successful experience develops their confidence to engage in real-life face-to-face communication, making them more willing to provide help to further perfect and improve their quality of online relationship. Simultaneously, shy individuals can learn and improve social skills by using a new online identity (Suler, 1999). Online activities can not only reduce the online shyness of shy individuals, but also partially reduce their offline shyness (Roberts, Smith, & Pollock, 2000).

Helping behavior is a moral practice, and is affected by individuals' shyness level and the online environment in which the behavior may occur. First, according to the social compensation hypothesis, young people who are introverted, shy, or experience social anxiety consider online social networking a form of "social compensation" (Peter, Valkenburg, & Schouten, 2005). This social compensation provides the young people a platform through which to engage in self-disclosure, thus compensating for their low offline social confidence (Brunet & Schmidt, 2008). Therefore, these users feel more comfortable communicating in social network environments, and develop this practice into an effective means of interpersonal communication and friendship forming (Bian, Han, Zhou, Chen, & Gao, 2015). Consequently, helping behavior is observed online more than in real life. Second, some incentive mechanisms for helping behavior exist online (such as self-reward, network integration, winning others' approval, receiving thanks from others, mutual benefit, and mutual assistance); these make shy individuals satisfied with their online infraction, which fulfills social needs they are unable to fulfill in real life (Chak & Leung, 2004). Therefore, we assume that the Internet likely causes shy individual to engage in helping behavior more frequently.

Internet users ask questions by using numerous platforms. In China, among the most widely used platforms are Baidu Tieba, Baidu Knows, bulletin board systems; however, the answers provided invariably differ. The main factors that influence online helping behavior are the shyness level, the presence of a foreseeable reward, the complexity of the problem, and the urgency of the problem. The Chinese usually follow the viewpoint that people are born to be kind and thus tend to be willing to help people who need help. Consequently, in this study, we considered the characteristics of the event asking for help itself and the motivations of the helpers. We proposed two main hypotheses:

Hypothesis 1. The complexity of the problem and presence of rewards significantly affects the online helping behavior of shy individuals.

Hypothesis 2. The urgency of the problem promotes online helping behavior by shy individuals.

2. Research 1: influence of the complexity of problems and offering of a reward on the online helping behavior of shy individuals

2.1. Methods

2.1.1. Experimental design

Experiment 1 investigated how the complexity of the problem and the presence of a foreseeable reward influenced the online helping behavior among shy individuals. The experiment involved a 2 (shyness level: high/low) × 2 (foreseeable reward: yes/no) × 2 (complexity of the problem: high/low) mixed experimental design. In the experiment, the complexity of the problem served as the within-subject factor, whereas the shyness and foreseeable reward served as the between-subject factors. High-complexity problems require detailed answers, whereas low-complexity problems can be replied to with a simple answer. In the experiment, the online helping behavior of the subjects was a dependent variable. A subject providing an answer was considered helping behavior.

2.1.2. Participants

Three hundred undergraduate students from a Shandong Province university were selected using random sampling. The 27% of students with the highest shyness scores were enrolled as the high-shy group, and the 27% with the lowest scores were enrolled as the low-shy group. We then selected a total of 68 participants from the two groups—half from the high-shy students and half from the low-shy students. Each groups had 14 male students and 20 female students, aged from 18 to 23 years ($M = 19.94$ year, $SD = 1.05$ years).

2.1.3. Measures

2.1.3.1. College students' shyness Scale.
Shyness levels were measured using the College Students' Shyness Scale, which was proposed by Wang, Wang, Han, Gong, and Gao (2009). The Chinese version has 17 items that are answered using a 5-point scale. In the present study, the Cronbach's alpha for total scale was 0.86, and for the item subscales was between 0.63 and 0.77.

2.1.3.2. Network simulation.
The experimental problem development process comprised the two following stages:

(a) Design simulation problems: A question-and-answer website interface imitating that of Baidu Knows was designed, and 10 problems closely related with the life of college students were developed. The problems were separated into high and low complexity groups, each of which contained five problems. In the experiment, the participants, using computers, were presented with the questions and could answer if they desired.
(b) Confirm the validity of the problems and balance the difficulty of the problems. Before the experiment, we confirmed that at least 80% of 20 randomly selected subjects (who did not continue on to participate in the experiment) knew the correct answer to the problems under normal circumstances. These participants also assessed the complexity of each problem by using a 5-point scale (1 = *low complexity*, 5 = *high complexity*). We selected five high-complexity problems (average score of 4 or higher) and five low-complexity problems (average score of 2 or lower).

2.1.4. Procedure

The experiment was conducted according to the following steps:

(a) Subgroup division: The high- and low-shy individuals were each divided into two groups. One subgroup of both the high- and low-shy groups was told that they could obtain 100 Baidu Knows credits for solving each problem (the credits can be offered by Baidu Knows users to reward those who answer their questions). The other subgroups were not informed of the incentive. The participants of the four subgroups were then each presented with the 10 aforementioned questions, any or all of which they could answer.
(b) Record results: The experimental results were recorded and quantified. A participant providing an answer was considered helping behavior and was scored with 1 point, whereas not providing an answer received 0 points.

2.2. Results

2.2.1. Descriptive statistics

The descriptive statistics of the research 1 are shown in Table 1.

2.2.2. Influence of the complexity of the problem and presence of a foreseeable reward

ANOVA for repeated measurement revealed that the complexity of the problem exerted a significant main effect on helping behavior, $F(1, 64) = 89.45$, $p < 0.001$, $\eta_p^2 = 0.583$; the participants tended to exhibit online helping behavior for low-complexity