

## GENDER MODERATES THE EFFECT OF HOMO ECONOMICUS BELIEF ON TRUST

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We proposed that gender may moderate the effect of homo economicus belief on trust and conducted 2 experiments to test this hypothesis. Before completing the trust measurements, participants in Study 1 transcribed either a passage about homo economicus belief (experimental condition) or a passage about psychological methods (control condition). Participants in Study 2 unscrambled 10 sentences that either contained a word associated with economics (experimental condition) or did not contain any words associated with economics (control condition). Results showed that (a) levels of trust among the experimental condition participants were significantly lower than those in the control condition; (b) men in the experimental condition showed significantly lower levels of trust than did men in the control condition, but there was no difference in the trust levels of women in the experimental and control conditions. Results indicate that homo economicus belief inhibits trust and that this effect is moderated by gender.

*Keywords:* homo economicus belief, trust, gender difference.

Explaining trust is a significant area of research (Acar-Burkay, Fennis, & Warlop, 2014; Leonardelli & Loyd, 2016; Thielmann & Hilbig, 2014). Several researchers have found that studying economics has a negative influence on

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students' trust and cooperation (e.g., Bauman & Rose, 2011; Cipriani, Lubian, & Zago, 2009; Haucap & Müller, 2014). For example, Xin, Dou, and Chen (2013) revealed that the trust level of third-year college students of economics was significantly lower than that of first-year students, but no such difference was revealed in students of other majors. *Homo economicus belief* is the assumption that human beings are rational decision makers who have the motivation to maximize their own self-interest in social interactions, and is regarded as the basic humanity hypothesis of economics (Smith, 1776/1937; Xin & Liu, 2013). Thus, Xin et al. (2013) suggested that, for economics students, homo economicus belief inhibits trust.

To investigate the causal effect of homo economicus belief on trust, Xin and Liu (2013) first activated participants' homo economicus belief, either by exposing them to a written introduction about homo economicus or by exposure to economic situations, such as, profit calculation and serving as an enterprise manager, and then measured participants' trust level. They found that activated homo economicus belief inhibited trust. Recently, the negative effect of homo economicus belief on trust was also demonstrated in consumption situations (Liu, Xin, & Lin, 2016).

In our study, we proposed that gender would moderate the effect of homo economicus belief on trust. We surmised that there may be two reasons for this. First, findings in several studies have revealed that male students of economics are more likely to behave selfishly, exploit others, and act corruptly than are female students of economics (see e.g., Frank, Gilovich, & Regan, 1993; Frank & Schulze, 1999; Kirchgässner, 2005). Thus, it seemed to us that men's prosocial behaviors, such as trust, were more likely to be inhibited by economics learning than were women's. Second, men view trust more strategically than do women. Buchan, Croson, and Solnick (2008) found that the relationship between men's trusting behavior and their expectation of their partner's trustworthiness is stronger than that of women. Therefore, we proposed that men who identify with the homo economicus belief are more likely than others are to distrust other people.

In contrast to our hypothesis, Haucap and Müller (2014) found that the trust level of women who were advanced economics students decreased more than that of male advanced-level economics students. However, we did not think that this research challenged our hypothesis. In Haucap and Müller's binary trust game, if one participant distrusts others, her or his profit and the partner's profit are 3.5 and 3.5, respectively. If one participant trusts others, her or his profit and the partner's profit are 5 and 7, respectively, if the partner is trustworthy, or 2 and 5, respectively, if the partner is untrustworthy. Because partners will achieve a greater profit if they behave in a trustworthy way, and the trustors will also thereby achieve a greater profit, this means that partners have no motivation to

behave in an untrustworthy way. Indeed, researchers have found that in situations that need dichotomous responses—like the binary trust game—participants will show trust differently from the way they do in situations that require diversified responses—like an investment game (Liu & Xin, 2013). Second, in Haucap and Müller's study, participants may distrust others to reach equity between themselves and their partner. That is, the profit for each of the partners in the game is 3.5. Therefore, Haucap and Müller's findings do not necessarily indicate that women are more likely than men are to be inhibited by their economics learning from showing trust.

In sum, we hypothesized that homo economicus belief would inhibit men's trust rather than that of women, and conducted two experiments to investigate the moderating effect of gender.

## Study 1

A 2 (gender: men vs. women)  $\times$  2 (condition: experimental vs. control) experiment was conducted to investigate the moderating effect of gender on the relationship between explicit learning about homo economicus belief and trust.

### Method

**Participants and design.** We randomly assigned 97 college students to either an experimental ( $n = 49$ , 24 women, 25 men  $M_{\text{age}} = 20.57$  years,  $SD = 1.78$ ) or control condition ( $n = 48$ , 25 women, 23 men,  $M_{\text{age}} = 20.77$  years,  $SD = 1.73$ ). Participants were majoring in economics, education, sociology, or physics, and participants from these different majors were balanced in experimental and control conditions. All participants were given partial course credit for their participation.

**Material and procedure.** Participants were first asked to complete a transcribing task and then undertook a social attitude test. Participants transcribed either a passage about homo economicus (experimental condition) or one about psychological methods (control condition). The homo economicus passage introduced the idea that homo economicus belief is the humanity hypothesis of economics, according to which it is assumed that individuals are self-interested in interactions and make decisions based on the calculation of costs and benefits. The psychological methods passage explained how psychologists conduct research by means of experimental methods and questionnaires. Each of the two passages consisted of 187 Chinese characters. Next, participants' trust was measured by their response to three items: "Generally, would you say that most people can be trusted or not?," "In most cases, would you say that people are helpful or self-interested?," and "If there is a chance, would you say that most people would like to take advantage of you, or would interact fairly with you?"

Participants make a binary response to each item. The trust response scores range from 0 to 3, and a greater score indicates a higher trust level.

### Results and Discussion

In the experimental condition, the mean trust level of the women was 2.54 ( $SD = .72$ ) and that of the men was 1.80 ( $SD = .82$ ). In the control condition, the mean trust level of the women was 2.40 ( $SD = .82$ ) and that of men was 2.56 ( $SD = .59$ ). To test our hypothesis, we performed a 2 (condition: experimental vs. control)  $\times$  2 (gender: men vs. women) analysis of variance (ANOVA) on participants' trust. The results showed a significant main effect of condition,  $F(1, 93) = 4.24, p < .05$ , partial  $\eta^2 = .04$ , with participants in the experimental condition ( $M = 2.16, SD = .85$ ) displaying significantly lower trust than participants in the control condition ( $M = 2.48, SD = .71$ ). The results also showed a significant interaction effect between condition and gender,  $F(1, 93) = 8.97, p < .01$ , partial  $\eta^2 = .09$ . In the experimental condition, men's trust was significantly lower than that of men in the control condition, but there was no significant difference between the trust levels of women in the experimental and control conditions. Results showed no significant main effect of gender,  $F(1, 93) = 3.63, p > .05$ . In sum, in Study 1, homo economicus belief inhibited trust, and this effect was moderated by gender.

## Study 2

In Study 2 we aimed to validate the results of Study 1 by implicitly activating participants' homo economicus belief.

### Method

**Participants and design.** We randomly assigned 106 college students to either the experimental ( $n = 54$ , 27 women, 27 men,  $M_{\text{age}} = 20.06$  years,  $SD = .96$ ) or the control condition ( $n = 52$ , 30 women, 22 men,  $M_{\text{age}} = 19.92$  years,  $SD = 1.20$ ). Participants were majoring in either education or computer science, and participants from the two different majors were balanced in the experimental and control conditions. All participants were given partial course credit for their participation.

**Material and procedure.** In this experiment, we used the scrambled-sentence paradigm to implicitly activate participants' homo economicus belief (Shariff & Norenzayan, 2007; Yousaf & Popat, 2015). In the experimental condition, participants were asked to unscramble 10 short sentences, dropping an extraneous word from each to create a grammatically correct sentence. For example, "organization, profit, endeavors to, air, obtain" would become "organization endeavors to obtain profit." Five of the scrambled sentences given to students in the experimental condition contained one of five target words:

profit, market, trade, economy, and consumption, and the other five sentences contained no words that were associated with economics. The 10 scrambled sentences given to students in the control condition all contained only words that were not associated with economics. Each word in this task consisted of two Chinese characters. Because homo economicus belief is the basic humanity hypothesis of economics, our aim was to activate participants' homo economicus belief by using words related to economics.

When participants had completed this task, their trust was measured by means of a trust game applied in the form of a survey (Buchan & Croson, 2004; Xin, Xin, & Lin, 2016). In the survey, the following game rules were first introduced: "In this game, you and another person each have ¥10 (about US\$1.60). You can send  $x$  ( $x = 0, 1, 2, \dots, 10$ ) to her/him and she/he will get  $3x$ . Then, she/he can return  $y$  ( $y = 0, 1, 2, \dots, 3x$ ) to you. Your profit is  $10 - x + y$  and her/his profit is  $10 + 3x - y$ ." Then, participants reported the amount ( $x$ ) that she/he would send to the partner. A larger amount indicates a higher trust level.

Finally, participants were asked to evaluate on a 7-point scale the degree of their agreement with the statement that "Individuals are self-interested; they only participate in social interactions that can benefit themselves." The higher the evaluation score of participants, the stronger was their agreement with the homo economicus belief.

## Results and Discussion

To investigate whether or not the scrambled-sentence paradigm activated participants' homo economicus belief, we performed a 2 (condition: experimental vs. control)  $\times$  2 (gender: men vs. women) ANOVA on participants' self-assessment of the check item. The results showed a significant main effect only of condition,  $F(1, 102) = 7.76, p < .01$ , partial  $\eta^2 = .07$ . Participants in the experimental condition reported self-assessments ( $M = 4.65, SD = 1.46$ ) that were significantly higher than those of participants in the control condition ( $M = 3.85, SD = 1.39$ ). That is, the scrambled-sentence paradigm activated homo economicus belief of participants in the experimental condition.

To test our hypothesis, we performed a 2 (condition: experimental vs. control)  $\times$  2 (gender: men vs. women) ANOVA on participants' trust. The results suggested a significant main effect of condition,  $F(1, 102) = 4.86, p < .05$ , partial  $\eta^2 = .05$ . Trust level of participants in the experimental condition ( $M = ¥4.74, SD = ¥3.16$ ) was significantly lower than that of participants in the control condition ( $M = ¥6.06, SD = ¥3.37$ ). The results also showed a significant interaction effect between condition and gender,  $F(1, 102) = 5.77, p < .05$ , partial  $\eta^2 = .05$ . The level of trust of men in the experimental condition ( $M = ¥3.59, SD = ¥3.38$ ) was significantly lower than that of the men in the control condition ( $M = ¥6.45, SD = ¥3.76$ ), and there was no significant difference between the

level of trust of women in the experimental condition ( $M = ¥5.89$ ,  $SD = ¥2.49$ ) and of those in the control condition ( $M = ¥5.77$ ,  $SD = ¥3.08$ ). Results showed no difference between men's trust ( $M = ¥4.88$ ,  $SD = ¥3.80$ ) and women's trust ( $M = ¥5.82$ ,  $SD = ¥2.79$ ),  $F(1, 102) = 1.68$ ,  $p > .05$ . The results validated those of Study 1.

## General Discussion

The results of the two experiments showed that homo economicus belief inhibited the men's trust but not that of the women.

In several studies, researchers have revealed the negative effect of economics learning on trust and cooperation (e.g., Bauman & Rose, 2011; Cipriani et al., 2009; Liu et al., 2016; Xin et al., 2013). Having trust means that individuals (trustors) believe that their partner will take the trustor's interests into account and therefore the trustors dare to make decisions that open them to the risk of exploitation by their partner (Balliet & Van Lange, 2013). In contrast to having trust, when the individual holds the homo economicus belief, he or she assumes that people have the motivation to compete with each other to maximize their own self-interest (Smith, 1776/1937). Thus, it is reasonable to suggest that holding the homo economicus belief would inhibit the individual's trust. The findings in both our study and in Xin and Liu's (2013) study support this suggestion.

In our study, we also revealed the moderating effect of gender on the relationship between homo economicus belief and trust. That is, homo economicus belief inhibited the men's trust but not that of the women, which is consistent with findings reported in previous literature (Frank et al., 1993; Frank & Schulze, 1999; Kirchgässner, 2005). Buss (1999) expressed the view that there are differences between the adaptive domains that females and males have faced throughout evolutionary history. For example, males become more competitive by obtaining material resources to attract females and foster offspring, whereas females are expected to be more engaged in social interactions to maintain strong ties with others. Because of the different adaptive domains that females and males encounter, for evolutionary reasons they may exhibit different personality characteristics. Specifically, men are more competitive, aggressive, and assertive than women are (e.g., Costa Jr., Terracciano, & McCrae, 2001; Van Vugt, De Cremer, & Janssen, 2007) and men view trust more strategically than women do (Buchan et al., 2008). Therefore, men are more likely than are women to distrust others and to come into conflict with others when they hold the belief that individuals have the motivation to compete with each other to maximize self-interest.

In our study, participants' homo economicus belief was activated either explicitly or indirectly by economics-related words. Both the homo economicus belief and economics-related words are closely related to the economy; however,

because our participants were college students, their economic experiences were limited. The potential moderating effect of economic experience on gender needs to be investigated further.

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