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Honesty-humility and prosocial behavior: The mediating roles of perspective taking and guilt-proneness

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The prosocial personality trait of honesty-humility has received extensive attention in the last decade. However, research on the mechanism underlying the relationship between honesty-humility and prosocial behavior is rather scarce. This study aims to explore the internal mechanism underlying this relationship to draw a complete picture of the honesty-humility trait. A sample of 458 Chinese young adults was obtained to complete self-report measures of honesty-humility, perspective taking, guilt-proneness, and prosocial behavior. The mediation model revealed that: (1) honesty-humility positively related to prosocial behavior; (2) perspective taking and guilt-proneness mediated the relationship between honesty-humility and prosocial behavior, separately; and (3) the effect of honesty-humility on prosocial behavior was mediated via perspective taking and then guilt-proneness. In conclusion, we provide an initial support for the mediating roles of perspective taking and guilt-proneness in the relationship between honesty-humility and prosocial behavior. Both theoretical and practical implications for understanding the psychological mechanisms of prosocial behavior are discussed.

Key words: Guilt-proneness, honesty-humility, mediation model, perspective taking, prosocial behavior, prosocial personality.

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INTRODUCTION

Prosocial behavior, which is defined as behavior motivated by the intention to help people, plays a vital role in our society (Penner, Dovidio, Piliavin & Schroeder, 2005). There has been much interest in exploring the determinants of prosocial behavior (Grant & Gino, 2010; Ruci, van Allen & Zelenski, 2018). For instance, many studies have focused on situational factors that affect an individual's prosocial behavior (Fiske, 2004). An important issue in this area is to explore the individual differences in prosocial behavior (Carlo, Roesch & Melby, 1998; Poulin, Holman & Buffone, 2012). Thus, one particular concern in this regard would be to search for the personality trait that links to prosocial behavior, namely, prosocial personality (Habashi, Graziano & Hoover, 2016; Ruci *et al.*, 2018). The honesty-humility trait has recently been proposed, which plays an important role in highlighting the basic prosocial trait (Hilbig, Glöckner & Zettler, 2014).

The HEXACO model is a variation and extension of the Big Five personality model, as it produced a new sixth basal personality trait, namely, honesty-humility. This trait refers to “the tendency to be fair and genuine in dealing with others, in the sense of cooperation with others even when one might exploit them without suffering retaliation” (Ashton & Lee, 2007). Therefore, the honesty-humility reflects the tendency to proactively display prosocial behavior (Pfattheicher & Böhm, 2018). Notably, research has shown that honesty-humility could consistently predict prosocial behavior across a variety of situations (Lee & Ashton, 2013; Zettler & Hilbig, 2015). The social projection theory indicates that individuals high in honesty-humility project their own prosociality on other people, under the expectation that other people are also prosocial (Pfattheicher & Böhm, 2018; Thielmann

& Hilbig, 2014). Although the prosociality of honesty-humility is well established, little research has explored the precise underlying mechanisms in a more general context, which are crucial for increasing prosocial behavior.

According to the Cognitive-Affective Processing System (CAPS) of personality, there are five mediating units, including encoding, expectancies and beliefs, affects, goals and values, and self-regulatory competencies and plans, which consistently generate behaviors (Mischel, 2004; Mischel & Shoda, 1995). This model suggests that cognitive and affective factors are important mediating mechanisms underlying the relationship between personality and behavior. Previous research findings provide several examples: Penner, Fritzsche, Craiger and Freifeld (1995) found that Big Five agreeableness is not related to helpfulness but is significantly related to other-oriented empathy. Similarly, research indicates that agreeableness can predict helping behavior fully through manipulating of perspective taking (Habashi *et al.*, 2016). In other words, prosocial personality may be more closely related to prosocial thoughts and feelings than to prosocial behavior. Therefore, based on the above theoretical and empirical evidence, we primarily focus on exploring the mediating roles of perspective taking and guilt-proneness in the relationship between honesty-humility and prosocial behavior.

The mediating role of perspective taking

Perspective taking, which is deemed as a component of empathy (Davis, 1983), is the process of understanding thoughts and feelings from the other's point of view (Galinsky, Ku & Wang, 2005). These features may explain why individuals who score high on honesty-humility behave more prosocially. First, a body

of literature has confirmed that prosocial personality traits are positive predictors of perspective taking (Magalhães, Costa & Costa, 2012; Melchers, *et al.*, 2016). For example, Big Five agreeableness has consistently been positively correlated with perspective taking (Mooradian, Davis & Matzler, 2011; Song & Shi, 2017). Thus, as a prosocial personality trait, honesty-humility may be linked to perspective taking. Second, empathy may increase prosocial behavior. From a theoretical perspective, the empathy-altruism hypothesis holds that empathy elicits prosocial motivation, which directly points to an increase in the welfare of people in need of help (Batson *et al.*, 1991). From an empirical perspective, extensive evidence links perspective taking to prosocial behavior (Bensalah, Caillies & Anduze, 2016; Oswald, 2002). Moreover, a meta-analysis revealed a causal influence of perspective taking on altruistic behavior (Underwood & Moore, 1982). Third, the empathic mediation model indicates that people low in agreeableness could increase helping through manipulating of perspective taking (Habashi *et al.*, 2016). Based on the above theoretical and empirical literature, we put forward the first hypothesis in this study:

Hypothesis 1: Perspective taking will mediate the relationship between honesty-humility and prosocial behavior.

The mediating role of guilt-proneness

Guilt-proneness refers to “a predisposition to experience negative feeling about personal wrongdoing, even when the wrongdoing is private” (Cohen, Panter & Turan, 2012). Although people may experience uncomfortable feelings when they feel guilty, guilt-proneness has a positive prosocial function (Tignor & Colvin, 2017), as it motivates people to behave more generously and cooperatively (Ketelaar & Au, 2003). This prosocial outcome may be explained by the negative-state relief model. According to this model, people alleviate their negative feelings, such as guilt, by engaging in prosocial behaviors (Cialdini *et al.*, 1987). Empirical studies have also supported this model, indicating that guilt-proneness is positively related to prosocial behavior (Cohen, Wolf, Panter & Insko, 2011; Quiles & Bybee, 1997; Zhang *et al.*, 2017). Therefore, we assume that guilt-proneness is linked to prosocial behavior – that is, the higher guilt-proneness, the more likely prosocial behavior is to be generated. However, although quite a few studies have examined the relationship between personality and guilt-proneness, prosocial personality in particular, the results are inconsistent. Some studies have found a positive relationship between agreeableness and guilt-proneness (Einstein & Lanning, 1998), while others have found a weak relation (Tong *et al.*, 2006). As a result, it is necessary to further clarify whether prosocial personality is associated with guilt-proneness. We speculate that honesty-humility is positively related to guilt-proneness for several reasons. First, honesty-humility and guilt-proneness both have moral personality profiles, and display prosocial properties (Cohen, Wolf, Panter & Insko, 2011). Second, according to social norm theory, individuals high in honesty-humility internalize moral and social-responsibility norms (Berkowitz, 1972; Schwartz, 1975), and once they violate a social norm, they may tend to generate feelings of guilt (Kugler & Jones,

1992). What is more, guilty mediation model shows that guilt is an important mediator, which links prosocial personality to the decision of volunteering (Jiang, Garris & Aldamer, 2018). To this end, we put forward the second hypothesis in this study:

Hypothesis 2: Guilt-proneness will mediate the relationship between honesty-humility and prosocial behavior.

The serial multiple mediation model

As mentioned above, both perspective taking and guilt-proneness have prosocial functions. Guilt originates in the empathic recognition of other people's personal states (Hoffman, 1982). Moreover, perspective taking is a prosocial cognitive strategy, based on empathy (Galinsky *et al.*, 2005). That is, the better understanding of the other's perspective, the guilt-proneness will be higher when one offends the other (Leith & Baumeister, 1998). Therefore, we speculate that perspective taking may contribute to more guilt-proneness. In addition, some empirical evidence shows that perspective taking is a predictor of guilt (Lynch, Hill, Nagoshi & Nagoshi, 2012; Silfver & Helkama, 2007; Tangney, 1991). Based on the research mentioned above, we put forward the third hypothesis in this study:

Hypothesis 3: Perspective taking and guilt-proneness will mediate the relationship between honesty-humility and prosocial behavior sequentially.

The current study

It is worth mentioning that this study attempts to explore the above issue in a Chinese context, by taking into account the following considerations. First, from a cultural perspective, shame and guilt play different roles in regulating behaviors (e.g., moral behaviors and social control) in Eastern and Western societies (Bedford, 2004). Theoretically, shame is an internalized response that reminds people who violate socially accepted rules and norms, while guilt originates from personal recognition of violating interpersonal confidence or trust (Dearing, Stuewig & Tangney, 2005). Supposedly, Asian societies emphasize shame while Western cultures emphasize guilt, both of which are deemed as primary mechanisms of moral behaviors (Johnson *et al.*, 1987). With the blending of Chinese and Western cultures, this study aims to examine whether guilt-proneness might also work in collectivistic societies. Second, although there is considerably more focus on honesty-humility in Western samples, research using Chinese samples is still lacking. Therefore, we attempt to examine whether honesty-humility exists in Chinese culture.

This study aims to explore, in the Chinese context, two psychological mechanisms (perspective taking and guilt-proneness) that underlie the relationship between honesty-humility and prosocial behavior. Accordingly, there are three purposes of this study: (1) examining the link between honesty-humility and prosociality using a Chinese sample, and adding new empirical evidence; (2) testing the parallel mediating roles of perspective taking and guilt-proneness; and (3) examining the sequential mediating effects of perspective taking and guilt-proneness.

METHODS

Participants and procedure

Participants ($N = 460$) were recruited from two Chinese universities in Henan province and Chongqing by convenience sampling. The valid sample included 458 participants (303 females, 149 males, 6 undisclosed), ranging from 18 to 35 years old ($M_{\text{age}} = 21.57$ years, $SD = 2.88$). We excluded two participants due to their incomplete questionnaires (more than half of the questionnaires were not filled out). After written informed consent and demographic information, participants completed self-reports on the honesty-humility, perspective taking, guilt-proneness, and prosocial tendency measurements through paper and pencil administration in classes. All responses were anonymous. Participants were given a gift (pen or notebook) for their kind participation. All testing processes were performed by trained and experienced research assistants. Our research was approved by the Ethics Committee of Renmin University of China.

Measures

Honesty-humility. The honesty-humility subscale derived from the Chinese version of the 100-item HEXACO-PI-R (Lee & Ashton, 2004, 2006, 2018). It contains four facet-level subscales including 16 items: sincerity (e.g., “I wouldn’t use flattery to get a raise or promotion at work, even if I thought it would succeed”), fairness (e.g., “I would never accept a bribe, even if it were very large”), greed avoidance (e.g., “Having a lot of money is not especially important to me”), modesty (e.g., “I am an ordinary person who is no better than others”). Participants were asked to answer the items on a five-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Responses across the sixteen items were averaged, with higher scores meaning a higher level of honesty-humility. Cronbach’s alpha coefficient in the current study was 0.82.

Perspective taking. Perspective taking was measured by the seven-item perspective taking subscale from the Interpersonal Reactivity Index (IRI) (Davis, 1980, 1983). A sample item is “When I’m upset at someone, I usually try to ‘put myself in his shoes’ for a while.” The inventory was rated on a five-point Likert-type scale, ranging from 1 (does not describe me well) to 5 (describes me very well), with higher scores indicating a stronger tendency for perspective taking. In the current study, Cronbach’s alpha coefficient was 0.77.

Guilt-proneness. The Chinese version of the guilt-proneness scale was developed by Jinsheng Hu (Hu, 2008), which based on the Situational Guilt Inventory (SGI) (Arimitsu, 2002). The SGI was used to measure dispositional guilt (Hirao & Kobayashi, 2013; Tignor & Colvin, 2017). The Chinese version of this scale is widely used to assess the people’s guilt-proneness in China. The scale listed a number of situations and asked participants “when you image yourself in these situations, how guilty do you feel?”. It consists of 37 items, including four subscales: hurting others (e.g., “When I betray a friend”), being inconsiderate to others (e.g., “When I turn a blind eye to people in need”), behaving selfishly (e.g., “When I tell a lie”), and feeling indebted to others (e.g., “When I go back on a promise to someone”). The inventory was scored on a four-point Likert-type scale, ranging from 1 (feeling not guilty at all) to 4 (feeling very guilty). Responses across the thirty-seven items were averaged, with higher scores indicating a higher guilt-proneness. Cronbach’s alpha coefficient was 0.95.

Prosocial tendency measure. The prosocial tendency measure (PTM) was developed by Carlo, Hausmann, Christiansen and Randall (2003). In this study, we employed the Chinese version of the PTM (Kou, Hong, Tan & Li, 2007), which is used to assess prosocial behavior (Yu, Hao & Shi, 2018). It contains six subscales, including 26 items: public (e.g., “I can help others best when people are watching me”), emotional (e.g., “It makes me feel good when I can comfort someone who is very upset”), compliant (e.g., “When people ask me to help them, I don’t hesitate”),

altruistic (e.g., “I often help even if I don’t think I will get anything out of helping”), dire (e.g., “I tend to help people who are in real crisis or need”), and anonymous (e.g., “I think that helping others without them knowing is the best type of situation”). Participants were asked to rate the items on a five-point Likert-type scale, from 1 (does not describe me at all) to 5 (describes me greatly). Responses across the twenty-six items were averaged, with higher scores reflecting a higher level of prosocial behavior. Cronbach’s α was 0.90 in the current study.

Data analysis

All statistical analyses were conducted by using IBM SPSS 22.0. Descriptive analyses for key variables were calculated. To examine the mediation effect of perspective taking and guilt-proneness, a multiple mediation model (model 6) was established with PROCESS macro in SPSS (Hayes, 2013). Indirect effects were tested by a bias-corrected bootstrapping method ($n = 5,000$), using 95% confidence intervals. If the confidence interval does not contain zero (0), the multiple mediation model was successfully set up.

RESULTS

Descriptive analyses

The means, standard deviations, and correlations of all variables are presented in Table 1. The results showed that all key variables were positively interrelated with each other. Independent sample T-test indicated that there were significant gender differences on all variables. Women scored significantly higher than men on honesty-humility, perspective taking, guilt-proneness and prosocial behavior. Mean gender differences are presented in Table 2 and Table 3 shows the correlations among all variables separated by gender. The results showed that, for both women and men, all variables were positively correlated with each other, too.

Serial multiple mediation model

The mediating effects of perspective taking and guilt-proneness were examined controlling for gender. As shown in Table 4, the results indicated that, in the serial multiple mediation model, the total effect of honesty-humility on prosocial behavior was statistically significant ($B = 0.19$, $SE = 0.04$, $p < 0.001$), with indicating that people who are higher in honesty-humility show more prosocial behavior.

The indirect effects were tested using bias-corrected bootstrapping ($n = 5,000$). For the first mediator, the mediating role of perspective taking was significant (indirect effect = 0.05, 95% CI = 0.03–0.09), indicating that a higher level of honesty-

Table 1. Means, standard deviations, and correlations among all variables

| Variables | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 |
|-----------------------|----------|-----------|---------|---------|---------|---|
| 1. Honesty-humility | 3.47 | 0.57 | 1 | | | |
| 2. Perspective taking | 3.60 | 0.57 | 0.27*** | 1 | | |
| 3. Guilt-proneness | 3.41 | 0.46 | 0.33*** | 0.36*** | 1 | |
| 4. Prosocial behavior | 3.57 | 0.45 | 0.26*** | 0.41*** | 0.48*** | 1 |

Note: $N = 458$.

*** $p < 0.001$.

Table 2. Means and standard deviations of honesty-humility, perspective taking, guilt-proneness, and prosocial behavior by gender

| Scale | Women | | Men | | <i>t</i> |
|--------------------|-------|-----------|------|-----------|----------|
| | Mean | <i>SD</i> | Mean | <i>SD</i> | |
| Honesty-humility | 3.53 | 0.57 | 3.35 | 0.53 | 3.18** |
| Perspective taking | 3.65 | 0.57 | 3.49 | 0.57 | 2.84** |
| Guilt-proneness | 3.47 | 0.40 | 3.30 | 0.53 | 3.53** |
| Prosocial behavior | 3.61 | 0.40 | 3.48 | 0.52 | 2.64** |

Note: ***p* < 0.01.

Table 3. Correlations of honesty-humility, perspective taking, guilt-proneness, and prosocial behavior by gender

| Variables | 1 | 2 | 3 | 4 |
|-----------------------|---------|---------|---------|---------|
| 1. Honesty-humility | 1 | 0.23*** | 0.33*** | 0.23*** |
| 2. Perspective taking | 0.29*** | 1 | 0.30*** | 0.30*** |
| 3. Guilt-proneness | 0.29*** | 0.40*** | 1 | 0.39*** |
| 4. Prosocial behavior | 0.26** | 0.57*** | 0.54*** | 1 |

Note: Correlation coefficients for women and men are above and below triangle of the matrix, respectively.

p* < 0.01; *p* < 0.001.

Table 4. Testing the direct and indirect effects of Honesty-humility on prosocial behavior via perspective taking and guilt-proneness

| Effects | <i>B</i> | <i>SE</i> | 95% CI |
|--|----------|-----------|---------------|
| Direct effects | | | |
| Honesty-humility → perspective taking | 0.26*** | 0.05 | [0.16, 0.35] |
| Honesty-humility → guilt-proneness | 0.19*** | 0.04 | [0.12, 0.26] |
| Honesty-humility → prosocial behavior | 0.05 | 0.03 | [-0.02, 0.12] |
| Perspective taking → guilt-proneness | 0.22*** | 0.04 | [0.12, 0.26] |
| Perspective taking → prosocial behavior | 0.21*** | 0.03 | [0.15, 0.28] |
| Guilt-proneness → prosocial behavior | 0.35*** | 0.04 | [0.26, 0.44] |
| Indirect effects | | | |
| Honesty-humility → prosocial behavior | 0.14 | 0.02 | [0.10, 0.19] |
| Via perspective taking | 0.05 | 0.02 | [0.03, 0.09] |
| Via guilt-proneness | 0.07 | 0.01 | [0.04, 0.10] |
| Via perspective taking → guilt-proneness | 0.02 | 0.01 | [0.01, 0.04] |

Note: Analyses conducted using PROCESS model 6 on *N* = 452, due to 6 individuals with undisclosed gender data. Reported results are controlling for gender.

****p* < 0.001.

humility is associated with a stronger tendency to perspective taking, which, in turn, is associated with higher prosocial behavior. For the second mediator, the mediating role of guilt-proneness was also significant (indirect effect = 0.07, 95% CI = 0.04–0.10), indicating that a higher level of honesty-humility is related to higher guilt-proneness, which, in turn, is related to higher prosocial behavior. For the serial mediation, the results revealed that the indirect effect of honesty-humility on prosocial behavior through perspective taking and guilt-proneness was significant (indirect effect = 0.02, 95% CI = 0.01–0.04). That is, those higher on honesty-humility scored higher on perspective taking, predicting stronger guilt-proneness, which positively predicted higher prosocial behavior. However, honesty-humility had no significant

direct effect on prosocial behavior (*B* = 0.05, *SE* = 0.03, *p* = 0.14), indicating that the process of perspective taking and then guilt-proneness fully mediated the relationship between honesty-humility and prosocial behavior. The serial multiple mediation model is shown in Fig. 1.

In order to test whether there was a gender difference in this mediating model, multi-group path analysis was conducted. The results revealed that there was a significant difference between women and men, $\Delta\chi^2 = 19.25$, $\Delta df = 5$, *p* < 0.005. The separated results are displayed in Fig. 2. For both women and men, the serial multiple mediation models were established (see Supplement). Compared to women, perspective taking was a better predictor of guilt-proneness and prosocial behavior for men.

DISCUSSION

This study investigated the role of honesty-humility in relating to prosocial behavior and the underlying mechanisms of perspective taking and guilt-proneness. The results add new support to existing studies showing the validated prosociality of honesty-humility. Multiple mediation models showed that perspective taking and guilt-proneness fully mediated the link between honesty-humility and prosocial behavior. Further, the serial multiple mediation model showed that the effect of honesty-humility on prosocial behavior was fully mediated via perspective taking and then guilt-proneness. These mediating models may clearly explain why individuals high in honesty-humility behave more prosocially.

The current results indicate that people high in honesty-humility behave more prosocially through perspective taking. When they encounter others in need of help, individuals high in honesty-humility may understand the feelings and thoughts of other people (e.g., “how would I want to be treated in this situation”) and they then offer help. Thus, it can be stated that people high in honesty-humility possess a high level of perspective taking, which, in turn, positively predicts prosocial behavior. In other words, individuals low in honesty-humility need to be reminded to engage in prosocial behavior, whereas individuals high in honesty-humility do not. Perspective taking may serve as the “reminder.” Our findings are consistent with those of previous empirical studies showing that empathy is an important mechanism underlying the relationship between personality and prosocial behavior (Habashi *et al.*, 2016; Penner *et al.*, 1995) and also support the empathy-altruism hypothesis (Batson *et al.*, 1991). Above all, as our results revealed, perspective taking may play an important role in how individuals high in honesty-humility process prosocial information.

With regard to Hypothesis 2, the pattern of results showing that guilt-proneness mediates the relationship between honesty-humility and prosocial behavior is in line with the hypothesis. Our results extend the findings of the numerous previous studies that have examined the effect of prosocial personality on guilt-proneness and subsequently prosocial behavior. Specifically, first, this study suggests that a prosocial personality trait – honesty-humility – can positively predict guilt-proneness, consistent with previous study (Cohen *et al.*, 2011). As the results show, individuals high in honesty-humility are more inclined to feel guilty than people low in honesty-humility, even when they are

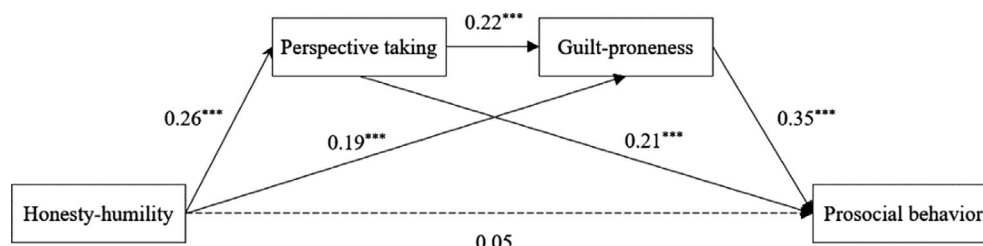


Fig. 1. Serial multiple mediation model. *** $p < 0.001$.

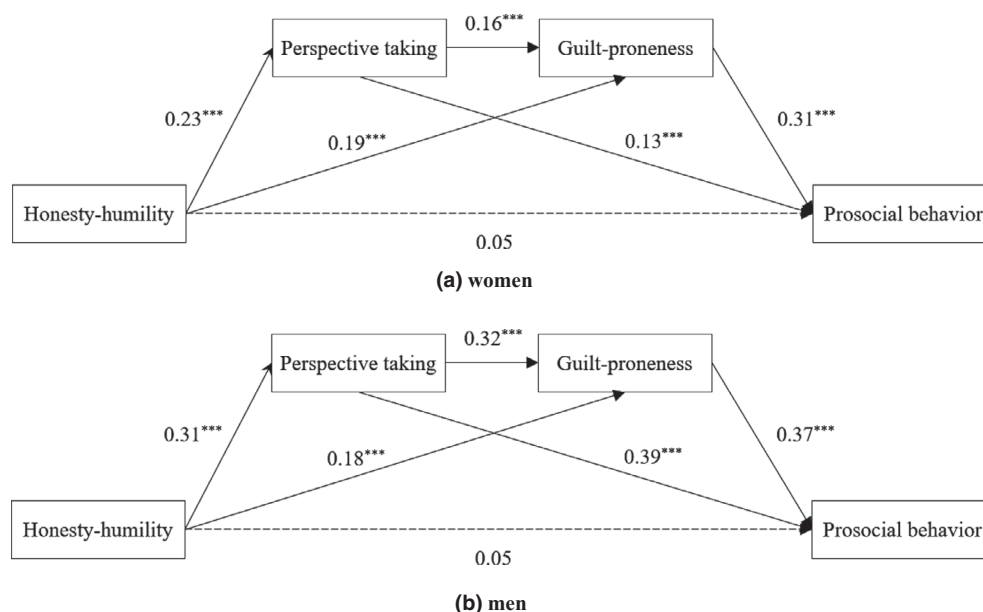


Fig. 2. (a) Serial multiple mediation model for women. (b) Serial multiple mediation model for men. *** $p < 0.001$.

confronted with the same situations that violate personal or social norms. This indicates that people high in honesty-humility internalize moral or social-responsibility norms, which guide their behaviors. Second, the current findings are consistent with those of previous studies showing that guilt-proneness can contribute to prosocial behavior (Ilies, Peng, Savani & Dimotakis, 2013; Quiles & Bybee, 1997). The negative-state relief model is also supported, indicating that feelings of guilt may induce negative states, which, in turn, increase the tendency to engage in prosocial behavior for the purpose of releasing personal distress. In short, individuals high in honesty-humility tend to feel guilty and then engage in more prosocial behavior to release their negative emotions.

Furthermore, a sequential pattern from perspective taking to guilt-proneness emerged in this study, the results supported Hypothesis 3. More specifically, individuals high in honesty-humility have a high level of perspective taking, which helps people better understand others' feelings and thoughts. When they violate personal or social norms, such people may experience more negative emotions and feel more uncomfortable (i.e., guilt) for regretting improper thoughts or behaviors. Then, they engage

in more prosocial behaviors, which have a compensatory or reparatory effect on relieving personal distress. Furthermore, our study also indicates that guilt-proneness originates in the cognitive empathy for recognizing other people's distress, feelings, and thoughts. No previous study has found sequential effects in linking honesty-humility to prosocial behavior. The sequential model provides a comprehensive picture that clearly elucidates the prosociality of honesty-humility. Moreover, both perspective taking and guilt-proneness fully mediated the relationship between honesty-humility and prosocial behavior, which addressed that prosocial thoughts and feelings may play important roles (Habashi *et al.*, 2016; Penner *et al.*, 1995). Based on the above mechanisms, we could develop interventions for increasing prosocial behavior, with full consideration of individual differences.

As for gender differences, women scored higher than men on all study variables, but perspective taking was a much better predictor of guilt-proneness and prosocial behavior in men. This result was consistent with previous studies (Silfver & Helkama, 2007). In emotional aspects, women scored higher than men. It can be concluded that women tend to think emotionally while

men tend to think rationally. Therefore, when making decisions, men are more likely to employ cognitive strategies (perspective taking) than women to feel guilt and behave prosocially.

In addition, our research proved some cross-cultural similarities. First, we employed the honesty-humility scale that derived from Western sample. Our findings indicated that honesty-humility also exists in Chinese people. Traditional Chinese culture always encourages people “to be honest”, “to be humble”, which is rooted in the Confucian ideal (Stipek, 1998). Second, in Chinese culture, guilt-proneness plays an important role in prosocial behavior. Previous studies demonstrated that guilt was related to personal responsibility that was influenced by individualism in Western culture (Bedford & Hwang, 2003). In our study, guilt-proneness was taken into account in the Chinese context. In both Western and Oriental cultures, guilt is an important self-conscious emotion. In this case, our study found that in collectivistic societies such as China, guilt-proneness was also salient and related to prosocial behavior. Other studies also found some cross-cultural similarities in guilt and shame (Johnson *et al.*, 1987), that support this result.

The current research has both theoretical and practical implications for understanding the psychological mechanisms underlying the association between prosocial personality, especially honesty-humility, and prosocial behavior. To be more specific, first, this study extends the application of HEXACO – honesty-humility to a Chinese sample. Our study demonstrates that the HEXACO-PI-R honesty-humility scale has good internal consistency and it is also suitable for use with Chinese people. Second, it has been proven that guilt-proneness also plays an important role in regulating prosocial behavior in Chinese culture. Therefore, this study extends the theory of shame and guilt in this cultural context. Third, we explored the underlying mechanisms which could help us better understand the honesty-humility trait, thereby enriching the HEXACO model. Given that one's personality is rather stable and that compounded feelings of guilt are bad for one's mental health, we could create interventions involving empathy training to improve prosocial behavior.

Although the current study shed light on why “nice guys” behave prosocially, several limitations should be noted. First, in essence, the current research is correlational analysis. We must therefore be cautious when inferring causality among the study variables. It is worth mentioning that the model of this study based on theories showed one of possible relationships among studied variables. There may exist some other possibilities needed to be further studied. For example, whether a higher sense of guilt makes it easier for people to be perspective taking? Therefore, future research should employ a longitudinal design and diverse measurement of prosocial behavior to confirm and expand the current results further. In addition, future research should consider that examining the above variables (honesty-humility, perspective taking, guilt-proneness, prosocial behavior) by factor analysis to explore whether those variables are expressions of certain personality traits (e.g. altruistic personality). Second, this study only considers one component of empathy – perspective taking. However, other important factors of empathy also need to be paid attention to, such as empathic concern. Previous studies have demonstrated that empathy concern is highly correlated with guilt

(Lynch *et al.*, 2012). Whether empathy concern, perspective taking, and guilt are the mechanisms in the relationship between honesty-humility and prosocial behavior need to be further explored together. Third, shame and guilt are usually deemed to be overlapping. In future research, shame should be considered in current models to distinguish from guilt, in order to examine the role of shame. Whether shame is actually more important in Eastern culture while guilt is emphasized in Western societies needs to be further explored. A cross-culture study is essential for clarifying this issue.

CONCLUSION

Overall, we applied a mediation model to examine the psychological mechanisms underlying the relationship between honesty-humility and prosocial behavior, deepening our understanding of the prosociality of the honesty-humility trait. Specifically, perspective taking and guilt-proneness separately and sequentially mediate this relationship. In this regard, prosocial personality is linked to prosocial behavior mostly through prosocial thoughts and feelings.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article at the publisher's web site:

Supplemental Table 1. Testing the direct and indirect effects of Honesty-humility on prosocial behavior via perspective taking and guilt-proneness among women.

Supplemental Table 2. Testing the direct and indirect effects of Honesty-humility on prosocial behavior via perspective taking and guilt-proneness among men.

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