



The rich are easily offended by unfairness: Wealth triggers spiteful rejection of unfair offers



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ABSTRACT

What does it do to people when they are rich or poor? Do they differ in their responses to unfair treatment? For example, are the wealthy more or less likely to accept an unfair offer in an ultimatum game where it is costly to reject an unfair offer? How about when it is not costly to reject an unfair offer? In the present research, we measured self-reported wealth (i.e., family income, Studies 1–3) and manipulated wealth using a “lucky draw” game (Studies 2 and 3) to examine how wealth affects responses to unfairness in an ultimatum game (Studies 1–3) and a new game called the cost-free rejection game (CFRG, Study 3). Across three studies, we found that wealthy people rejected an unfair offer (i.e., being offered 20% while the other kept 80% of the endowment) more frequently than the less wealthy, and that this tendency to reject unfairness was mediated by their increased feelings of entitlement. This suggests that the wealthy, or even people who temporarily perceive themselves to be wealthy, are more easily offended by unfairness than the less wealthy.

Inequality is a basic fact of nearly any group, collective, or society. Some people are more fortunate, have more resources, or are richer than others. What does wealth do to people? In particular, do the rich and poor differ in their responses to unfairness? For example, are the wealthy more or less likely to accept an unfair offer in an ultimatum game where it is costly to reject an unfair offer? How about when it is not costly to reject an unfair offer? These questions are of great scientific interest, especially in light of the growing literature on the psychological effects of social class, money, and power (e.g., Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012; Magee & Galinsky, 2008; Vohs, Mead, & Goode, 2006). They are also of strong societal interest because income inequality has been shown to be a determinant of aggression, violence, and distrust in societies (e.g., Van Lange, Rinderu, & Bushman, 2016; Wilkinson & Pickett, 2009).

However, at present little is known about how wealth might affect people's responses to others, in particular others' unfair treatment toward themselves. This research aimed to fill this research gap by testing whether “the rich” are more or less ready than “the poor” to accept unfair offers in an ultimatum game (UG) and in a newly developed game in which it is not costly to reject unfair offers (cost-free rejection game, CFRG). We focus on recent experiences of being fortunate as a basis of “being wealthy” (e.g., Mani, Mullainathan, Shafir, & Zhao, 2013; Shah, Mullainathan, & Shafir, 2012; Tricomi,

Rangel, Camerer, & O'Doherty, 2010), and tested two competing hypotheses: (a) the rich are *more* likely than the poor to accept unfairness if wealth induces feelings of responsibility to promote others' welfare; (b) the rich are *less* likely than the poor to accept unfairness if wealth induces a sense of entitlement.

One general argument suggests that wealth promotes social responsibility. People with more resources often face decisions to share resources with others to promote others' welfare. This argument, often referred to as *noblesse oblige*, implies that the wealthy are more prosocial toward others who ask for benefits that promote the collective interest. A well-replicated finding for this reasoning is that people contribute more to a public good or offer more in an ultimatum game when they are initially endowed with more economic resources (De Cremer, 2007; Smeets, Bauer, & Gneezy, 2015; Van Dijk & Wilke, 1994). That the wealthy give more than the poor can be explained by feelings of responsibility and a general tendency to promote others' or collective interests (De Cremer & Van Dijk, 2002; Van Dijk, de Kwaadsteniet, & De Cremer, 2009). Thus, this perspective suggests that wealthy (vs. poor) people might be more tolerant of unfairness if such tolerance serves the welfare of others and the collective (e.g., Fehr, Bernhard, & Rockenbach, 2008). Put differently, the wealthy are better able to afford accepting an unfair offer, and a motive to help the collective, including the less wealthy, can explain why they can

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overcome (some) ambivalence caused by an unfair offer.

Another logic suggests that wealth enhances feelings of entitlement. Entitlement often refers to one's perceived sense to deserve more resources or better outcomes and treatment than others (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004). It is linked to privilege, which is about the resources, outcomes, or rights one already has. Also, privilege and entitlement often relate to the notion that what one has (privilege) or may receive (entitlement) is superior to what most others have or may receive, and that this advantage is well-deserved. For example, the wealthy, compared to the poor, find it easier to justify their superior resources (Jost, Banaji, & Nosek, 2004; Lerner, 1980). But is there evidence for the thesis that wealth enhances entitlement?

Some research suggests that social class might relate to entitlement (Piff, 2014). For example, high-class (vs. low-class) individuals tend to be less prosocial (Piff, Kraus, Côté, Cheng, & Keltner, 2010), more self-serving and unethical (Dubois, Rucker, & Galinsky, 2015). They tend to prioritize material wealth when they perceive a chaotic environment (Piff, Stancato, Côté, Mendoza-Denton, & Keltner, 2012), focus more on their internal goals (Kraus et al., 2012), and show less compassion toward others' suffering (Stellar, Manzo, Kraus, & Keltner, 2012). Moreover, even mere reminders of money can lead people to prioritize self-sufficiency, to be more selfish, and to support free-market systems and social inequality that favor themselves (Caruso, Vohs, Baxter, & Waytz, 2013; Vohs et al., 2006). Given this evidence, Piff (2014) argued that high-class individuals might readily develop a sense of entitlement—they feel entitled to behave in a self-serving fashion. It is therefore plausible that wealth, a key aspect of social class (Oakes & Rossi, 2003; Piff et al., 2010), would enhance entitlement.

Another line of research on power also supports this argument. Power, which is defined as asymmetrical control over resources (e.g., wealth; Magee & Galinsky, 2008), is associated with less justice and less fairness (Blader & Chen, 2012). Powerful people tend to demand more resources for themselves, thereby violating norms of fairness, especially equality (De Cremer & Van Dijk, 2005; Van Dijk & De Cremer, 2006). Crucially, when they are victim of unfairness, powerful people identify their disadvantageous situation quickly and are more likely to take action against this situation (e.g., Sawaoka, Hughes, & Ambady, 2015). Taken together, this initial evidence suggests that wealth might increase one's perceived sense of entitlement—wealthy people feel entitled to receive fair or better outcomes and treatment and, as a result, are more likely to react against unfairness that violate their expectation.

1. Hypotheses and research overview

As noted earlier, it is plausible that wealth can either (a) elicit feelings of responsibility to promote others' welfare, and lead to less rejection of unfair offers (*Hypothesis 1*) or (b) elicit feelings of entitlement in response to unfairness that favors others, and lead to more rejection of unfair offers (*Hypothesis 2*). We conducted three studies using both nationwide and university student samples in China to test these two opposing hypotheses. Across our studies, unfairness was implemented in an ultimatum game (UG), a well-established paradigm to investigate fairness violations (Güth, Schmittberger, & Schwarze, 1982). In this game, the proposer gives the responder an unfair offer of CN¥2, but keeps the remaining CN¥8 out of CN¥10. If the responder accepts the offer, each receives the proposed amounts; otherwise both receive nothing. We chose the ¥2/¥8 offer that can elicit roughly 50% rejection rates (see Camerer, 2003).

Importantly, we should note that rejection in the UG is costly for the responder, and thus may challenge the poor. An alternative hypothesis could be that, relative to the wealthy, the poor are more likely to accept an unfair offer because they are less able to afford the cost of rejecting an unfair offer. To investigate this alternative explanation, we also designed a cost-free rejection game (CFRG)—a modified ultimatum game that allows for rejection with no personal cost in Study 3. A new

feature of this game was that responders receive asymmetric information that they would also receive the proposed amount (i.e., ¥2) even if they reject the offer (i.e., ¥2/¥8). Because rejection in this game involves no personal cost, rejecting an unfair offer should therefore be equally feasible for both the wealthy and the poor.

We either measured or manipulated wealth across three studies. In Study 1, we measured participants' family income instead of personal income, because some people might have no income themselves, but could benefit from family income. To manipulate wealth, we randomly assigned participants into either high-income or low-income group (Study 2) or included an extra moderate-income group (Study 3) based on whether they win a “lucky draw” game. This manipulation is “clean” in that it is unrelated to achievement, effort, or other aspects of income differences that naturally occur. All measures, manipulations, and exclusions were reported in our studies. All studies were approved by the Research Ethics Committee of the Faculty of Psychology at Southwest University.

2. Study 1

Study 1 provided an initial test of whether wealthy people were more or less likely to accept an unfair offer in a one-shot ultimatum game (*Hypothesis 1* vs. *2*).

2.1. Method

2.1.1. Participants

Two hundred seventy-eight participants (151 females) recruited from Sojump completed the study. Sojump is an online participant recruitment platform in China, with more demographically diverse samples. This sample size was determined based on previous studies (Piff, 2014; Piff et al., 2010). Participants' age ranged from 16 to 62 years ($M_{\text{age}} = 30.17$ years, $SD = 11.78$), and 86.7% of them were Han Chinese, the largest ethnic group (over 90% of the population) in China.

2.1.2. Procedure

Participants were informed to play a “money allocation” game (i.e., a one-shot ultimatum game) in which they had to split CN¥10 (¥1 = US \$0.16 at the time of the studies) with a stranger. In this game, participants acted as a responder and decided whether or not to accept the offer of “¥8 for the proposer, ¥2 for you” proposed by a stranger (i.e., the “ostensible” proposer). After their decision, they reported their family income, educational background, age, gender, ethnicity, and religiosity (see Piff et al., 2010). Family income was their annual family income per capita ranging from ¥2000 to ¥80,000 ($M = ¥19,557$, $SD = 11,019$). This was very close to China's average family income per capita (¥20,167) in 2014 (National Bureau of Statistics of China, 2015). Education was assessed with four categories (1 = *did not complete high school*, 2 = *high school graduate*, 3 = *college graduate*, 4 = *postgraduate degree*). Finally, participants who accepted the unfair offer were paid.

2.2. Results

Overall, 43% of all participants rejected the ¥2/¥8 offer. A binary logistic regression revealed that family income (standardized) significantly predicted the decision to reject the unfair offer, $b = 0.40$, Wald $\chi^2(1) = 9.11$, $p = 0.003$, odds ratio = 1.50, 95% CI (confidence interval) [1.15, 1.94].¹ After controlling for age, gender (1 = female, 0 = male), education, ethnicity (1 = Han Chinese, 0 = Other) and religiosity, this effect remained significant, $b = 0.43$, Wald $\chi^2(1) = 9.98$, $p = 0.002$, odds ratio = 1.54, 95% CI [1.18, 2.01]. Thus, in

¹ Unless otherwise mentioned, the rejection decision was coded as 1 if participants rejected the ¥2/¥8 offer, and 0 if they accepted this offer.

support of Hypothesis 2, participants with higher family income were more likely to reject unfairness (i.e., the ¥2/¥8 offer) than those with lower family income.

3. Study 2

To complement the family income measure, Study 2 would manipulate temporary perceived wealth with a “lucky draw” game (Tricomi et al., 2010). While income in real-life situations often relates to one's effort, skill, social class, or achievement that can easily be justified, the income differences elicited in this game are unrelated to any of these variables.

3.1. Method

3.1.1. Participants

Eighty undergraduate students voluntarily participated in the study. This sample size was determined based on previous research (Karagonlar & Kuhlman, 2013). Four students (three from the high-income group and one from the low-income group) almost correctly guessed the real purpose of the study and were excluded from the analyses to avoid biased responses, leaving a final sample size of 76 (40 females, $M_{age} = 20.50$ years, $SD = 1.32$).²

3.1.2. Procedure

Ten participants came to the lab in each session. Upon arrival, they were seated in separate cubicles numbered from 1 to 10. Participants learned that they would be paid according to their earnings in two unrelated games.

3.1.2.1. A lucky draw game. Participants were first asked to play a “lucky draw” game in which they had a chance to win ¥5 (see Fig. 1). Each participant received ¥3 as a baseline payment for participation. Then, they drew a digit in a roulette wheel that randomly assigned them to one of two groups: (a) ‘Win’ group with an extra bonus of ¥5 (¥8 in total, high-income group, $n = 37$); (b) ‘No-win’ group with no extra bonus (¥3 in total, low-income group, $n = 39$). Participants did not know whether other players received any bonus. As manipulation checks, participants reported their payments and indicated whether they perceived their income in this game to be high or low given the maximum they could get (i.e., a binary choice). To check whether this manipulation affected their mood states that might account for the wealth effect, they also completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988).

3.1.2.2. A one-shot ultimatum game. After the mood measure, participants played a one-shot ultimatum game in which they had to split ¥10 with another participant in another cubicle via the internet system. They were informed to remain anonymous to their partner, and their role was randomly assigned by the computer. In fact, all participants were the responder and decided whether to accept or reject the offer of “¥8 for the proposer, ¥2 for you” (overall rejection rate: 58%).

After their decision, participants reported their demographic information as in Study 1. To check whether they could accurately report their objective family income, we also measured their subjective family income as the average score across three items ($\alpha = 0.79$; e.g., “I have enough money to buy things I want.”) on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*; see Griskevicius, Tybur, Delton, & Robertson, 2011). Sixteen participants did not know about their objective family income, but in the remaining 60 participants, objective and subjective income were significantly correlated, $r(58) = 0.55$, $p < 0.001$. Afterward, participants answered some questions

about the study (e.g., their beliefs about the purpose of the study). Finally, participants were debriefed and paid according to their earnings in the two games.

3.2. Results

3.2.1. Manipulation checks

All participants correctly answered their total payments and perceived to have high or low income consistent with the wealth manipulation, thus the wealth manipulation was successful. Also, the high-income and low-income groups did not show significant differences in positive moods, $t(74) = 1.41$, $p = 0.16$, $d = 0.32$, or negative moods, $t(74) = -0.26$, $p = 0.80$, $d = -0.06$.

3.2.2. Manipulated wealth and rejection decision

A binary logistic regression on rejection decision with group (1 = high-income, 0 = low-income) as independent variable revealed that the high-income group rejected the ¥2/¥8 offer more frequently (70%) than the low-income group (46%), $b = 1.01$, Wald $\chi^2(1) = 4.43$, $p = 0.04$, odds ratio = 2.76, 95% CI [1.07, 7.10].

3.2.3. Objective family income and rejection decision

An alternative binary logistic regression on rejection decision with objective family income (standardized) as independent variable and age, gender, education, ethnicity, and religiosity as covariates ($N = 60$) showed that family income significantly predicted rejection decision, $b = 1.17$, Wald $\chi^2(1) = 8.12$, $p = 0.004$, odds ratio = 3.23, 95% CI [1.44, 7.24]. Higher family income predicted more rejection decisions.

To further test whether self-reported wealth (i.e., family income) and wealth manipulation independently predicted rejection decision, we conducted a binary logistic regression on rejection decision with objective family income (z-transformed), group (1 = high-income, 0 = low-income), and their interaction as independent variables, and age, gender, education, ethnicity, and religiosity as covariates ($N = 60$). We found significant main effects of group, $b = 1.86$, Wald $\chi^2(1) = 6.87$, $p = 0.01$, odds ratio = 6.40, 95% CI [1.60, 25.62], and family income, $b = 1.31$, Wald $\chi^2(1) = 8.41$, $p = 0.004$, odds ratio = 3.70, 95% CI [1.53, 8.96], but no significant interaction between them, $b = 1.64$, Wald $\chi^2(1) = 2.01$, $p = 0.16$, odds ratio = 5.16, 95% CI [0.53, 49.88]. Thus, self-reported family income and wealth manipulation independently affected rejection decision, both leading to more rejections of unfairness (i.e., the ¥2/¥8 offer).

4. Study 3

Studies 1 and 2 supported Hypothesis 2 that wealth triggers more rejections of unfair offers in the ultimatum game. Study 3 would replicate and extend these findings in three important ways. First, as described earlier, we included a cost-free rejection game (CFRG; a modified ultimatum game that allows for rejection with no personal cost) to rule out an alternative explanation—the poor are in need of extra money and are less able to afford rejecting unfair offers. Second, we added a moderate-income group in the “lucky draw” game for comparison (see also Van Doesum, Tybur, & Van Lange, 2017). This allows us to test whether the causal effect of wealth comes from being wealthy (“have-more-effect”), being poor (“have-less-effect”), or both. Third, by including ratings of entitlement and responsibility, we sought to provide more direct evidence for the mechanisms (i.e., feelings of entitlement) that we theorize to drive the wealth effect in rejecting unfair offers.

4.1. Method

4.1.1. Participants

To increase statistical power, and to provide a statistically stringent test of our hypotheses and reasoning, including the alternative explana-

² Statistical analyses using the full sample did not alter our conclusions.

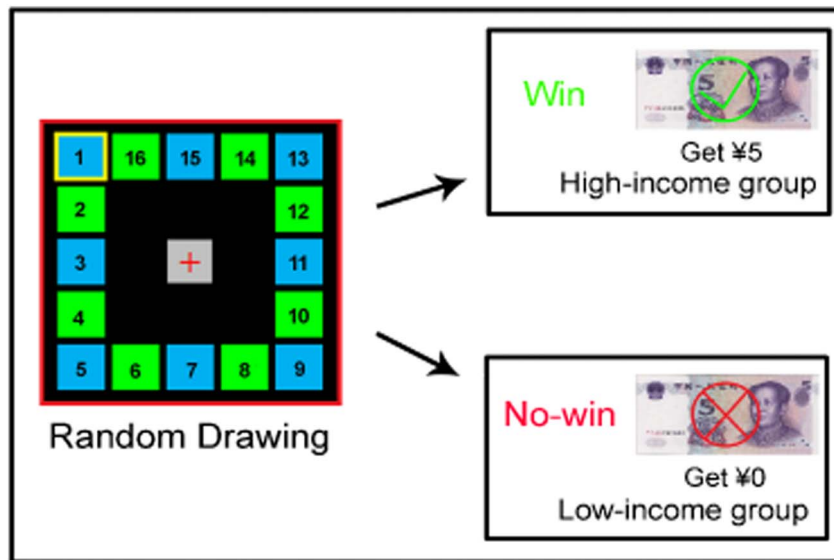


Fig. 1. The lucky draw game.

tion, we aimed to recruit at least 100 participants for each of six conditions. Six hundred thirty participants (333 females; 95.9% Han Chinese) recruited from Sojump completed the study. Their age ranged from 18 to 68 years ($M_{age} = 33.44$ years, $SD = 7.90$).

4.1.2. Procedure

Participants were randomly assigned to one of six conditions of a 3 (group: high-income, moderate-income, low-income) \times 2 (game: ultimatum game, cost-free rejection game) between-participants design.

4.1.2.1. A lucky draw game. Participants were first asked to play a “lucky draw” game in which they had an equal chance to win a bonus ranging from ¥0 to ¥10. Each participant received ¥3 as a baseline payment for participation. Then, they saw eleven red envelopes on the screen, and had an opportunity to choose one of the red envelopes that randomly assigned them to one of three groups: (a) ‘Win ¥10’ group with an extra bonus of ¥10 (¥13 in total, high-income group, $n = 210$); (b) ‘Win ¥5’ group with an extra bonus of ¥5 (¥8 in total, moderate-income group, $n = 209$); (c) ‘No-win’ group with no extra bonus (¥3 in total, low-income group, $n = 211$). Participants did not know about other players’ monetary bonus. For the wealth manipulation, participants rated how they perceived their income in this game (0 = the lowest income, 100 = the highest income) and their wealth at that moment (0 = extremely poor, 100 = extremely rich) relative to others on 101-point scales. They also completed the PANAS as a mood measure.

4.1.2.2. The money allocation game. Participants were then randomly assigned to play a one-shot ultimatum game (UG, $n = 313$) or a one-shot cost-free rejection game (CFRG, $n = 317$) in which they had to split ¥10 with another participant (see Fig. 2). Different from the UG, in the CFRG, responders learned that they would receive the proposed amount of money even if they rejected the offer, whereas their partner (i.e., the proposer) learned that both of them would receive nothing if they rejected. All participants then acted as the responder and decided whether or not to accept the offer of “¥8 for the proposer, ¥2 for you” proposed by another participant from an “ostensible” previous session (overall rejection rate: 61%).

4.1.2.3. Post-decision measures. After their decision, participants completed two measures of entitlement. They indicated how much money they should deserve to receive from the proposer in the allocation game ($M = 5.13$, $SD = 0.97$), and also rated two items

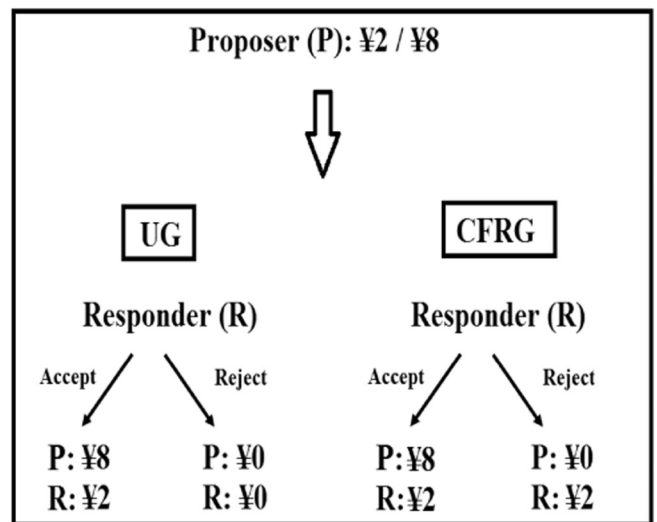


Fig. 2. Illustrations of the ultimatum game (UG; left) and the cost-free rejection game (CFRG; right).

(i.e., “I feel entitled to receive better outcomes than others.”; “I deserve more fair treatment than others.”) on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree; $\alpha = 0.64$; $M = 4.71$, $SD = 0.84$). These two measures of entitlement were highly correlated, $r(630) = 0.43$, $p < 0.001$. Thus, we standardized and averaged the two measures to obtain a composite score of entitlement ($M = 0.00$, $SD = 0.84$). To measure their feeling of responsibility for others’ interests, participants rated one item (i.e., “I feel responsible to care about the Proposer’s interest, even when he/she offers me a small amount.”) on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree; $M = 4.34$, $SD = 1.59$).

Some evidence suggests that rejection of unfair offers in an ultimatum game could also be driven by altruistic motivations (e.g., Fehr & Fischbacher, 2003). It is possible that if wealthy people feel more socially responsible to enforce fairness norms, they might be more likely to reject unfair offers (e.g., De Cremer & Van Dijk, 2009). To address this issue, we also asked participants to rate their feelings of social responsibility to enforce fairness norms using one item (i.e., “I feel responsible to enforce fairness norms by rejecting a small amount offered by the Proposer.”) on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree; $M = 4.36$, $SD = 1.51$). Finally, participants

reported the same demographic information as in Study 1, and were debriefed and paid according to their earnings in the two games.

4.2. Results

4.2.1. Manipulation checks

Participants' perceptions of their income ($M_s = 87.37, 50.12,$ and 5.00), $F(2, 629) = 1982.41, p < 0.001, \eta_p^2 = 0.86$, and wealth ($M_s = 72.21, 50.22,$ and 15.20), $F(2, 629) = 534.18, p < 0.001, \eta_p^2 = 0.63$, were significantly different across the three conditions manipulated with the lucky draw game. Thus, the wealth manipulation was successful. They also showed significant differences in positive moods, $F(2, 629) = 33.24, p < 0.001, \eta_p^2 = 0.10$, and negative moods, $F(2, 629) = 4.20, p = 0.015, \eta_p^2 = 0.01$, across the three conditions. Low-income participants reported less positive moods ($p_s < 0.001$) and more negative moods ($p_s = 0.02$ and 0.049) than high-income and moderate-income participants, whereas the high-income and moderate-income participants did not significantly differ in their moods ($p_s > 0.52$).

4.2.2. Manipulated wealth and rejection decision

To test our hypotheses, we created two Helmert-coded contrast variables for group: Contrast 1 (*high-income versus moderate- and low-income contrast*) and Contrast 2 (*moderate-versus-low income contrast*). We further conducted a binary logistic regression predicting rejection decision using game (1 = ultimatum game, 0 = cost-free rejection game) and the two contrasts in step 1, and the interactions between game and the two contrasts in step 2. Participants in the CFRG rejected the ¥2/¥8 offer more frequently (72%) than those in the UG (50%), $b = -0.98, \text{Wald } \chi^2(1) = 32.12, p < 0.001, \text{odds ratio} = 0.38, 95\% \text{ CI } [0.27, 0.53]$. Moreover, participants in the high-income group were more likely to reject this unfair offer (73%) than those in the moderate- and low-income groups (55%), $b = 0.84, \text{Wald } \chi^2(1) = 19.80, p < 0.001, \text{odds ratio} = 2.32, \text{CI } [1.60, 3.37]$, but the moderate-income and low-income participants did not differ in their rejection of the ¥2/¥8 offer (56% and 54%, $p = 0.60$, see Fig. 3). These findings suggest that the causal effect of manipulated wealth on rejection of unfairness comes from being wealthy (“have-more-effect”), rather than being poor (“have-less-effect”). The interactions between game and Contrast 1 or Contrast 2 ($p_s > 0.51$) were not significant. This suggests that the cost of rejection did not moderate the effect of wealth on rejection of an unfair offer.

4.2.3. Objective family income and rejection decision

An alternative binary logistic regression on rejection decision with objective family income as independent variable and age, gender,

education, ethnicity, and religiosity as covariates showed that family income significantly predicted rejection decision, $b = 0.27, \text{Wald } \chi^2(1) = 7.10, p = 0.008, \text{odds ratio} = 1.31, 95\% \text{ CI } [1.07, 1.60]$. Thus, consistent with Studies 1 and 2, the wealthier, as measured by family income, were more likely to reject unfair offers.

Finally, we conducted a binary logistic regression predicting rejection decision using family income (standardized), game (1 = ultimatum game, 0 = cost-free rejection game), the two contrasts of group (step 2), as well as all two-way interactions (step 3) and the three-way interaction (step 4). Participants' age, gender, education, ethnicity, and religiosity were included as covariates in step 1. We found significant effects of family income, $b = 0.24, \text{Wald } \chi^2(1) = 5.23, p = 0.02, \text{odds ratio} = 1.27, 95\% \text{ CI } [1.04, 1.56]$, game, $b = -0.95, \text{Wald } \chi^2(1) = 28.56, p < 0.001, \text{odds ratio} = 0.39, 95\% \text{ CI } [0.27, 0.55]$, and Contrast 1, $b = 0.72, \text{Wald } \chi^2(1) = 12.94, p < 0.001, \text{odds ratio} = 2.05, 95\% \text{ CI } [1.39, 3.03]$. Contrast 2 was not significant, $b = -0.13, \text{Wald } \chi^2(1) = 0.40, p = 0.53, \text{odds ratio} = 0.88, 95\% \text{ CI } [0.59, 1.32]$. None of the two-way or three-way interactions were significant ($p_s > 0.12$), which suggests that although participants were sensitive to the cost of rejection, such cost did not moderate the effect of wealth on rejection of an unfair offer.

4.2.4. Mediation analysis

First, we examined the influence of manipulated wealth on entitlement. A one-way ANCOVA with family income (z-transformed) as a covariate revealed a main effect of group, $F(2, 626) = 44.50, p < 0.001, \eta_p^2 = 0.12$. High-income participants ($M = 0.41, SD = 0.97; p < 0.001$) felt more entitled than moderate-income ($M = -0.14, SD = 0.75$) and low-income participants ($M = -0.28, SD = 0.62$), whereas the moderate-income and low-income participants did not significantly differ in their feelings of entitlement ($p = 0.09$). The effect of family income was not significant, $F(1, 626) = 2.61, p = 0.11$.

To test whether feelings of entitlement mediated the effect of wealth on rejection, we conducted a mediation analysis using bootstrapping method based on 5000 bootstrap samples (Preacher & Hayes, 2008). As described earlier, game (UG vs. CFRG) did not moderate the effect of wealth, so we collapsed our analyses across the two games. The total effect of Contrast 1 (i.e., high-income versus moderate- and low-income contrast) on rejection rates of the ¥2/¥8 offers (total effect = 0.26, $p < 0.001$) became nonsignificant when feelings of entitlement was included in the model (direct effect = $-0.06, p = 0.44$). Feeling of entitlement significantly mediated the effect of manipulated wealth on rejection rates, $b = 0.66, 95\% \text{ CI } [0.48, 0.87]$. This mediation effect of feelings of entitlement was still significant, $b = 0.69, 95\% \text{ CI } [0.49, 0.90]$, even when we included all other potential mediators (i.e., positive moods, negative moods, feeling of responsibility for others' interests, and feeling of responsibility for norm enforcement) in the model.³

5. General discussion

The present research provides novel insights into how wealth affects one's response to fairness violations. Across three studies, we measured self-reported wealth or manipulated wealth using a “lucky draw” game, and found that increased wealth elicited more rejections of unfairness. Study 3 also uncovered that feelings of entitlement plausibly accounted for this effect: The wealthier feel more strongly entitled to fair offers, and thus reject unfair offers more often. Interestingly, two unique states

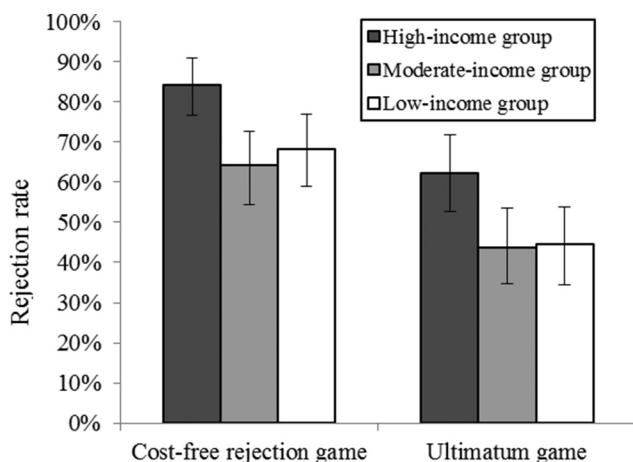


Fig. 3. Rejection rate as a function of group and game in Study 3. Error bars represent 95% confidence intervals.

³ We also conducted four alternative mediation analyses with the same bootstrapping method, including positive moods, negative moods, feeling of responsibility for others' interests, and feeling of responsibility for norm enforcement as the mediator, respectively. Results revealed that none of these variables significantly mediated the effect of manipulated wealth on rejection rates (i.e., zero are included in the 95% CIs, see Supplementary materials).

of wealth yielded similar findings. In addition to family income as a naturally occurring state, even a temporarily induced state of wealth caused spiteful responses to unfairness. This finding is especially novel, as the induced wealth is based on luck and is independent of competence, prestige, or “old money”. A random-effects meta-analysis of Studies 2 and 3 ($N = 497$) suggests a positive effect of induced wealth (high- versus low-income group) on rejection of the ¥2/¥8 offer, $d = 0.42$, 95% CI [0.21, 0.63]. Moreover, the pattern of findings with moderate-income group as the comparison (e.g., Van Doesum et al., 2017) suggests that a state of having more makes people feel more entitled to fair treatments (“have-more-effect”), not that a state of “having less” undermines feelings of entitlement. Taken together, these findings provide strong support for the notion that the wealthy feel entitled to their fortunate situation, and are therefore more likely to reject unfair offers by others.

We also conducted analyses to address three potential concerns about our results. First, it is possible that the poor are more needy and more dependent on receiving something by accepting unfairness in the ultimatum game. Alternatively, wealthy people are in less need of extra money and are thus more able to afford rejecting unfair offers. Study 3 was designed to rule out this alternative explanation by adding a cost-free rejection game in which participants did not pay any cost for rejection. Findings suggested that cost for rejection did not moderate the effect of wealth on rejection of unfairness. Thus, the wealth effect on response to unfairness could not be explained by need or cost, although participants were more likely to reject when rejecting an unfair offer was cost-free than when it was costly.

Second, some evidence suggests that rejection of unfair offers in an ultimatum game could be interpreted as fairness norm enforcement (e.g., Fehr & Fischbacher, 2003). It is possible if wealthy people feel more responsible, they might be more likely to reject unfair offers for fairness concerns. Study 3 addressed this issue by asking participants to rate how responsible they felt to enforce fairness norm after the ultimatum game. We found that feeling of responsibility did not mediate the effect of manipulated wealth on rejection of unfairness, $b = -0.001$, 95% CI [-0.02, 0.01]. Thus, wealthy people reject unfair offers not because they want to enforce fairness norms.

Third, we only chose the ¥2/¥8 offer across all studies. Thus, differences in rejection of this offer are unlikely to be caused by unfairness consideration, except for the ‘wealth effect’. An unanswered question is whether the wealthy are more likely to reject any offer or only the ¥2/¥8 offer. To answer this question, we ran a small-scale study ($N = 60$, 30 participants for each of high-income and low-income groups) by varying the degree of (un)fairness (fairness level: ¥5/¥5, ¥4/¥5, ¥3/¥7, ¥2/¥8, and ¥1/¥9) in a one-shot repeated UG. We found a significant interaction between group and unfairness level: high-income, compared to low-income, participants were more likely to reject unfair offers of ¥2/¥8 and ¥3/¥7, but not fair offers of ¥5/¥5 (see Supplementary S2).

As noted earlier, the present findings are consistent with previous evidence that people from higher social class tend to be more self-serving in social interactions (e.g., Piff et al., 2012). Importantly, our research also offers some new insights. First, our findings suggest that wealth alone, even merely by luck, makes people feel more entitled, and more likely to reject unfair offers. Clearly, this induced wealth differs from social class, but it provides evidence that a temporary state of wealth promotes feelings of entitlement.

Second, we provide a methodological contribution to the work on unfairness by designing a cost-free rejection game. Basically, this game is similar to a punishing game—just taking (or not taking) some money from a person who treats oneself unfairly without any monetary cost. Undoubtedly, in daily life, punishing may be sometimes not monetary costly (e.g., limiting opportunities; Van Doesum, Van Lange, & Van Lange, 2013; Van Lange & Van Doesum, 2015), and our cost-free rejection game might be used to examine whether cost contributes to people's responses to unfairness.

Third, it is possible that wealthy people, even based on luck, may rapidly develop a greater sense of power (Dubois et al., 2015) that makes them more approach-oriented (Keltner, Gruenfeld, & Anderson, 2003), such as expressing anger and acting against unfairness (Carver & Harmon-Jones, 2009; Galinsky, Gruenfeld, & Magee, 2003). This explanation is also consistent with “wealth enhances entitlement”, given that power strongly relates to entitlement (Sawaoka et al., 2015).

Fourth, some initial evidence suggests that additional earnings in an unrelated task before playing an ultimatum game could be related to rejections of unfairness (e.g., Andersen, Ertaç, Gneezy, Hoffman, & List, 2011). Importantly, our manipulation focused on creating a state of having more or less than others, which even when not emphasized, may cause social comparison (Boyce, Brown, & Moore, 2010). This is consistent with recent evidence showing that winning a competition against others (through social comparison), but not just winning a lottery, promotes a sense of entitlement that leads to more self-serving dishonest behaviors (Schurr & Ritov, 2016). Moreover, as Study 3 suggested, the causal effects we found are likely caused by the wealthy-versus-less-wealthy comparison, rather than the poor-versus-less poor comparison.

Before closing, we should briefly outline limitations and avenues for future research. First, our samples are limited to China, a large, non-western society with roots in communist values, which now faces a transition to greater wealth but also stronger wealth inequality. We do not confirm whether our findings could generalize to other societies (e.g., Yamagishi, Li, Takagishi, Matsumoto, & Kiyonari, 2014). Second, we acknowledge that the ultimatum game and the cost-free rejection game are only one of the many ways in which one could examine people's responses to unfairness. Also, various specific motivations and preferences (e.g., various fairness concerns, or feelings of envy) may cause a rejection in these games, although we attempted to measure some of these motivations (e.g., entitlement and social responsibility). Third, we found no support for the social responsibility effect on wealthy people's response to unfairness. That participants' outcome depended on the proposer's decision in the ultimatum game may make them feel less socially responsible. Moreover, we did not vary the perceived wealth of the proposer, which makes income differences somewhat less salient—a topic worthy of future research.

6. Concluding remarks

Increases in income inequality have received much debate in science and society. There is little doubt that smaller income inequality promotes trust and prosociality, and reduces aggression and violence (e.g., Markus & Conner, 2013; Van Lange et al., 2016; Wilkinson & Pickett, 2009). The present findings are relevant to this debate, and raise the possibility that feelings of entitlement by the wealthy may serve to justify self-interested behaviors in various domains, and perhaps cause assertiveness not appreciated by less fortunate others. Moreover, our research suggests that the wealthy, or people who temporarily feel wealthy, are more easily offended by unfairness. These findings from China with both nationwide and student samples are important, because a WEIRD (Western, Educated, Industrialized, Rich, and Democratic) sample represents only 25% of the world (Henrich, Heine, & Norenzayan, 2010; Markus, 2016), which increases by around 18% after including China. Importantly, China has historically endorsed communism, but now is in a transition to increasing wealth inequality. Taken together, the present research reinforces the possibility that people in a rapidly changing society find it exceptionally easy to justify their relative wealth that even occurs by mere chance. This readiness to justify income differences, along perhaps with some tendencies among the less fortunate to accept such differences, might help explain why income inequality exists and continues to persist in many societies.

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Appendix A. Supplementary data

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