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ARTICLE

How does economic inequality shape conspiracy theories? Empirical evidence from China

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Abstract

Conspiracy theories tend to be prevalent, particularly in societies with high economic inequality. However, few studies have examined the relationship between economic inequality and belief in conspiracy theories. We propose that economic inequality leads people to believe conspiracy theories about economically advantaged groups (i.e., upwards conspiracy theories) and that moral evaluations of those groups mediate this relationship. Study 1 ($N=300$) found support for these ideas in a survey among Chinese residents. Study 2 ($N=160$) manipulated participants' perceptions of economic inequality in a virtual society. The manipulation shaped moral evaluations of economically advantaged groups, and conspiracy beliefs, in the predicted manner. In Study 3 ($N=191$) and Study 4 ($N=210$), we experimentally manipulated participants' perceptions of economic inequality in real Chinese society and replicated the results of Study 2. In addition, in Study 4, we find that economic inequality predicts belief in conspiracy theories about economically disadvantaged groups (i.e., downward conspiracy theories), which was mediated by anomie. We conclude that perceived economic inequality predicts conspiracy theories about economically advantaged groups and that moral evaluations account for this effect. Also, upward and downward conspiracy theory beliefs are associated with different psychological processes.

Zhao-Xie Zeng and Cai-Yu Tian contributed equally to the paper.

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KEYWORDS

conspiracy beliefs, economic advantage, economic inequality, moral evaluation

While China has witnessed rapid GDP growth and has achieved remarkable economic achievements in recent years, economic inequality has caused social discontent within China (Lei et al., 2018). The gap between the rich versus the poor has been widening since the 1990s, with the Gini Coefficient (an indicator of the degree of economic inequality) consistently being above the internationally accepted threshold of 0.4 for many years (Chancel et al., 2022; Lei et al., 2018; Xie & Zhou, 2014). Economic inequality exacerbates competition and social comparison (Greitemeyer & Sagioglou, 2017) and undermines social cohesion (Nishi et al., 2015). Economic inequality also is associated with increased belief in conspiracy theories (Casara et al., 2022). Conspiracy theories usually attribute societal events to the actions of powerful and hostile groups that presumably have conspired to pursue selfish and malevolent goals (Imhoff & Bruder, 2014; van Prooijen & Acker, 2015). Conspiracy theories hence predict negative attitudes to authorities (Swami et al., 2011), and cause hostility and conflicts between groups (Petrović et al., 2019).

Researchers have investigated the relationship between economic inequality and conspiracy beliefs in Western samples (Casara et al., 2022, 2023). However, conspiracy beliefs vary across countries (Hornsey & Pearson, 2022), and findings from Western societies (Casara et al., 2022, 2023) may not necessarily be applicable to explain Chinese society, which has faced widespread corruption since economic reforms in the 1980s (Fisman & Wang, 2015; Li et al., 2016). Corruption is not only associated with economic inequality (Dincer & Gunalp, 2012; Gupta et al., 2002), it is also often strongly associated with opacity (Andersson & Heywood, 2009; Chen & Ganapati, 2023; Kolstad & Wiig, 2009). At the same time, corruption undermines different forms of trust (Dinesen, 2013; Herreros, 2023; Uslaner, 2008), which undoubtedly provides a fertile ground for the breeding of conspiracy theories. The present contribution will examine the link between economic inequality and conspiracy beliefs in a Chinese setting, while also testing a novel explanation for this link.

ECONOMIC INEQUALITY AND CONSPIRACY THEORIES

Throughout history, conspiracy theories often have surged during major social crises (e.g., Fritsche et al., 2017; Mao et al., 2021; van Prooijen & Douglas, 2017). For example, the 9/11 terrorist attacks in 2001, the global financial crisis in 2008, and the COVID-19 outbreak in 2019 have all spawned widespread belief in conspiracy theories (Jetten et al., 2022). Social crises cause the status quo of society (such as existing power structures, norms of behaviour and so forth) to suddenly change or collapse, leading people to experience increased feelings of anxiety, uncertainty and loss of control (Jetten et al., 2022; Park, 2010). These aversive feelings increase people's need to make sense of the crisis event, potentially attributing them to the deliberate actions of groups perceived to be hostile (Casara et al., 2022, 2023; van Prooijen, 2020; van Prooijen & Douglas, 2017).

Economic inequality is an ongoing form of crisis that makes societies more likely to experience periods of wars, violent revolutions and state collapse (Scheidel, 2017). It also undermines social stability and order, providing fertile ground for conspiracy theories (Casara et al., 2022; Jetten et al., 2022; see also Sprong et al., 2019). By portraying economic inequality as the result of secret and malicious collusion of powerful groups, conspiracy theories may provide a comprehensive explanation of the detrimental societal circumstances commonly associated with inequality (Federico et al., 2018; Jetten et al., 2021; Jolley et al., 2018). Economic inequality specifically leads people to believe that those who are economically affluent must have done something dishonest to acquire their wealth (Carvacho & Álvarez, 2019). Inequality hence provides a justification to denigrate economically privileged groups through conspiracy theories, enabling perceivers to maintain a positive image of themselves and their ingroups (Biddlestone et al., 2021; Cheung & Lucas, 2016; Douglas et al., 2017; Jetten et al., 2021). We

therefore hypothesize that economic inequality may lead people to believe in conspiracy theories about economically advantaged groups (i.e., groups with high economic status and wealth) (Hypothesis 1).

THE ROLE OF MORAL EVALUATION IN THE RELATIONSHIP BETWEEN ECONOMIC INEQUALITY AND CONSPIRACY THEORIES

Previous research has found that anomie (reflecting perceived societal dysfunction and disorder) mediates the link between economic inequality and conspiracy theories (Casara et al., 2022). Economic inequality intensifies people's perceptions of anomie by undermining existing societal structures (Teymoori et al., 2017). Furthermore, anomie stimulates a breakdown of social trust and norms, delegitimize and invalidate the authority of social leaders and therefore provides a breeding ground for conspiracy theories (Jetten et al., 2022). Anomie hence mediates the relationship between economic inequality and conspiracy theories.

Anomie is only one possible explanation of why economic inequality leads to conspiracy theories, and other mediating factors are likely to exist (Jetten et al., 2022). Moreover, anomie reflects the collapse of social structures and leadership. China has a high collectivistic culture, however, and the public has high trust in, and support for the Chinese government and the social system (Vargas-Salfate et al., 2018; Xie et al., 2022). The mediating role of anomie in the relationship between economic inequality and conspiracy beliefs hence may be less obvious in China.

Conspiracy theories often reflect people's social identity motivation and prejudice against certain groups. For example, the belief in immigration-related conspiracy theories is closely linked with hate and opposition to immigrants (Bertin et al., 2022; Imhoff et al., 2022; Jolley et al., 2020). Belief in conspiracy theories about economically advantaged groups may also emerge from negative attitudes towards these groups. In China's traditional wealth concept, people often contrast wealth with morality, and hold the view that "one cannot become wealthy without being unjust" (*wéi fù bù rén*; Tanjitpiyanond et al., 2022; Wu et al., 2018; Yang et al., 2017). As such, economic inequality may prompt a negative moral evaluation of wealthy groups, who may be assumed to have acquired their fortune through illegitimate means. Thus, moral evaluations of economically advantaged groups may mediate the relationship between economic inequality and belief in conspiracy theories about these groups.

Social identity describes the tendency of people to identify strongly with the group to which they belong, merging group identity with the self (Tajfel & Turner, 1979). This helps individuals feel a sense of belonging and make sense of the world (Hornsey, 2008; Tajfel & Turner, 1979; Xiao et al., 2016). To maintain a positive social identity, people are motivated to believe in content that supports their in-group and devalues their out-group (van Bavel & Pereira, 2018). Economic inequality could lead people to mentally divide society into different wealth groups (Connor et al., 2021; Tanjitpiyanond et al., 2022). This stimulates more frequent social comparisons between groups, increases intergroup conflict and hostility, and increases negative stereotypes about different wealth groups (Jetten et al., 2021; Kraus et al., 2017; Nishi et al., 2015).

In the stereotypes of rich versus poor groups, morality is an important dimension particularly when evaluating rich groups (Brambilla, Hewstone, & Colucci, 2013; Leach et al., 2007; Yang et al., 2017). In many societies, citizens stereotype wealthy groups as cold and immoral, as they may be perceived as having acquired their wealth through illegitimate and selfish means (Sussman et al., 2014). Empirical studies have found that the rich (high social class) are indeed more likely to commit immoral acts such as lying and cheating than the poor (low social class; Kraus et al., 2009; Piff et al., 2012). Increased economic inequality is likely to exacerbate perceptions that higher social classes are less moral than lower social classes (Jetten et al., 2021; Tanjitpiyanond et al., 2022). Economic inequality thus may lead to more negative moral evaluations of economically advantaged groups.

Such moral evaluations of groups are important because they predict emotional and behavioural responses to these groups (Brambilla et al., 2021; Brambilla, Sacchi, et al., 2013). For instance, these moral evaluations may stimulate the perception that groups have deliberately committed immoral

acts in secret (Knobe, 2010; Rogers et al., 2019). From an evolutionary perspective, moral evaluations of groups can help people gauge potential outgroup threats (Brambilla, Sacchi, et al., 2013; Engell et al., 2007). Conspiracy theories are likely to emerge in such settings, as these are functional to identify possible threatening alliances and take preventive actions against possible harms (van Prooijen & van Vugt, 2018). Moral evaluations of specific groups (such as politicians and oil companies) indeed are associated with belief in conspiracy theories (Cordonier et al., 2021; van Prooijen & Jostmann, 2013).

In sum, the moral evaluation of economically advantaged groups may predict conspiracy beliefs about these groups. Considering that economic inequality increases negative moral evaluations of economically advantaged groups, we hypothesize that moral evaluation mediates the effect of economic inequality on belief in conspiracy theories (Hypothesis 2).

OVERVIEW OF THE PRESENT STUDY

In the present study, we examine the relationships between perceived economic inequality, belief in conspiracy theories, and moral evaluation through a correlational study (Study 1) and three experimental studies (Studies 2, 3 and 4). In Study 1, we investigated the relationships between perceived economic inequality, the moral evaluation of economically advantaged groups, and belief in conspiracy theories in a Chinese sample using a survey study. In Studies 2, 3 and 4, we manipulated participants' perceptions of economic inequality in a virtual society (Study 2) and Chinese society (Studies 3 and 4) to examine the causal effects of inequality.

OPEN PRACTICES STATEMENT

All data and materials of the studies reported here are publicly available on the Open Science Framework, and Studies 1, 2 and 4 are pre-registered.¹ For all the studies we report all the conditions and measures (either in the method sections or in Appendix S1 and S2). All studies were conducted with Chinese samples. All of the studies reported here have formal ethical approval.

STUDY 1

The purpose of Study 1 was to explore the relationship between perceived economic inequality, the moral evaluation of economically advantaged groups (hereafter referred to as moral evaluation) and belief in conspiracy theories about economically advantaged groups (it can also be referred as upward conspiracy theories, cf. Nera et al., 2021; hereafter referred to as UCTs). All participants completed measures of perceived economic inequality, moral evaluations and UCTs. We expected a positive correlation between perceived economic inequality and UCTs, and negative correlations of these two variables with moral evaluation.

Method

Participants and design

We sent out a battery of questionnaires through Credamo (<https://www.credamo.com/home.html#/>), a Chinese crowdsourcing site similar to Amazon's Mechanical Turk. In total, 348 adult participants in

¹Data and materials can be found via https://osf.io/zv6ym/?view_only=f810ab73267e49eb98b9cbac43393c29. Pre-registration protocols for Study 1 and Study 2 can be found via https://osf.io/2m4qp/?view_only=6f4379dd640b49fb8e7005564112fe1b. Pre-registration protocols for Study 4 can be found via https://osf.io/puqf7/?view_only=23594e44459b4238822ecfa3c0d5debe.

mainland China provided written informed consent and completed the questionnaires. Seven participants were excluded for being under the age of 18, 23 participants were excluded for failing at least one lie detector question (e.g., “I was careless when answering questions”), 7 participants were excluded for taking less than 2s to answer more than 50 percent of the questions (excluding demographic variables) and 11 participants were excluded for regularly answering more than eight items on a questionnaire with a reverse score. The final sample for data analysis consisted of 300 participants (114 male, 186 female), ranging in age from 18 to 60 years, with a mean age of 31.37 years ($SD = 7.64$).

Materials and procedure

Perceived economic inequality was assessed using the measure of Schmalor and Heine (2022). The measurement consisted of 8 items (e.g., “Almost all of the money that is earned goes to only a few people”; 1 = *strongly disagree*, 7 = *strongly agree*, $\alpha = .85$). We adapted the horizontal dimensions of the stereotype content questionnaire (including assessments of moral and friendly traits) developed by Abele et al. (2016) to measure participants' moral evaluations. Prior to the survey, participants read an instruction statement: “Here are some descriptions of economically advantaged groups” (e.g., the rich), please read the sentences below and indicate the extent to which you agree or disagree. Participants then gave their views on the 10 statements about economically advantaged groups (e.g., “I think they are just”; 1 = *strongly disagree*, 7 = *strongly agree*, $\alpha = .95$).

Belief in conspiracy theories related to economically advantaged groups was adapted from the scale of upward conspiracy beliefs (Nera et al., 2021). This scale mainly targets groups in society with relatively strong objective power levels (such as pharmaceutical groups, elites, etc.²). Participants rated how much they agreed or disagreed with five conspiracy theories (e.g., “Some pharmaceutical groups encourage the spreading of diseases because they have the monopoly on the treatments”; 1 = *strongly disagree*, 7 = *strongly agree*, $\alpha = .91$). Demographic information such as gender, age, income, education and subjective social class³ were also collected. After completing all the measurements, participants were paid a small amount of money.

Results

Descriptives and correlations are displayed in Table 1 and show that economic inequality and UCTs are negatively correlated with moral evaluation, and economic inequality is positively correlated with UCTs. Meanwhile, the results showed that education, income and subjective social class were significantly negatively correlated with UCTs.

In view of these results, we used the bruceR package (version 0.8.7; Bao, 2022) in R 4.0 running the PROCESS Model Code developed by Hayes (2018) to test if moral evaluation would mediate the relationship between perceived economic inequality and UCTs. The results showed that the total effect was significant (*total effect* = 0.76, 95% CI [0.67, 0.86], $p < .001$). As shown in Figure 1, economic inequality negatively predicted moral evaluation ($B = -0.49$, $SE = 0.05$, $p < .001$); in turn, moral evaluation negatively predicted UCTs ($B = -0.36$, $SE = 0.07$, $p < .001$). The direct effect was significant (*direct effect* = 0.59, 95% CI [0.46, 0.72], $p < .001$). Moral evaluation mediated the link between economic inequality and UCTs, *indirect effect* = 0.18 (23.68% of the total effect), 95% CI [0.10, 0.26], $p < .001$. Previous studies have found significant effects of subjective social class, education and income on belief in conspiracy theories (e.g., Douglas et al., 2016; Mao et al., 2020). Even after controlling for these variables, the mediating effect of moral evaluation was still significant, *indirect effect* = 0.14 (19.44% of the total effect), 95% CI [0.07, 0.22].

²In a pilot experiment, participants identified these groups as the economically advantaged groups.

³We also examined the moderating role of subjective social class in an exploratory manner, and that the results are provided in Section 3 of Appendix S2.

TABLE 1 Descriptives and correlations (Study 1).

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Gender	—	—	—						
2. Age	31.37	7.64	-.14*	—					
3. Edu ^a	5.03	0.59	.07	-.09	—				
4. Inc ^b	5.81	2.11	-.20***	.30***	.20***	—			
5. SSC ^c	5.41	1.27	.00	.12*	.14*	.33***	—		
6. PEI ^d	4.40	1.20	.00	.07	-.09	-.20***	-.29***	—	
7. ME ^e	4.90	1.14	-.08	.14*	.09	.30***	.38***	-.51***	—
8. UCTs ^f	3.46	1.49	-.04	-.01	-.16**	-.29***	-.22***	.62***	-.52***

Note: *N* = 300.

Abbreviation: UCT, upward conspiracy theory.

^aEdu means educational background.

^bAnnual personal income.

^cSubject social class.

^dPerceived economic inequality.

^eMoral evaluation about economically advantaged groups.

^fBelief in conspiracy theories related to economically advantaged groups.

p* < .05; *p* < .01; ****p* < .001.

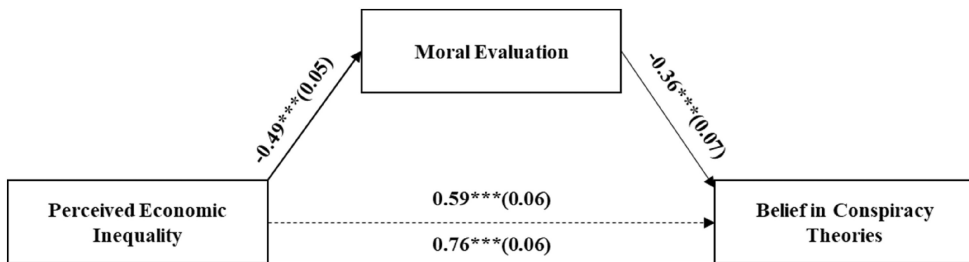


FIGURE 1 Mediation analysis (Study 1). *N* = 300. Values are *B*(*SE*). ****p* < .001.

Discussion

The results of Study 1 support the hypothesis that the moral evaluation of economically advantaged groups plays a mediating role in the relationship between economic inequality and belief in conspiracy theories about those groups. Specifically, the higher the perception of economic inequality, the lower people's evaluation of the morality of economically advantaged groups and the more strongly they believed conspiracy theories about those groups. This is a novel finding that provides a new perspective for understanding the relationship between economic inequality and conspiracy theory beliefs. Study 1 is limited by its cross-sectional design, however. In the following, we report two experiments that have examined the effects of manipulating the perceived level of economic inequality on UCTs, as well as the mediating role of moral evaluations.

STUDY 2

In order to enhance the reliability of the findings of Study 1, we have used an experimental approach to test our hypotheses in Study 2. Participants were assigned to conditions of high versus low economic inequality by reading different text materials. The present study used the materials of earlier research (e.g., Casara et al., 2022; Sprong et al., 2019), by manipulating economic inequality in a fictitious society

(“Bimboola”). After the reading task, participants were asked to rate their perceived economic inequality, moral evaluations of the wealthy class and belief in conspiracy theories associated with the wealthy class (CTs) in Bimboola. Based on our line of reasoning, we expected a positive effect of perceived economic inequality on UCTs, with moral evaluations as the mediator of this effect.

Method

Participants and design

All participants provided their consent to participate. The study used a design with two between-subjects conditions (economic inequality: high vs. low). Based on the parameters of previous studies (Casara et al., 2022; Tanjitpiyanond et al., 2021), using Monte Carlo simulation developed by pwrSEM to estimate the statistical test power of SEM (Wang & Rhemtulla, 2021). We set the statistical test power to 0.8, the simulation times to 5000. The level of significance was 0.05. This analysis showed that to reach a power of 0.80 for the mediation effect, a minimum of 120 participants is required. Considering possible exclusions, we recruited 170 adult participants in mainland China through Credamo. Ten participants were excluded from the data analysis because they failed the manipulation check (see the Study Procedure section below for details). The final sample for data analyses consisted of 160 participants (56 male, 104 female, $M_{\text{age}} = 29.81$, $SD = 7.36$).

Materials and procedure

Following previous research (Casara et al., 2022), participants in the high economic inequality condition were asked to first participate in a reading-comprehension task. Participants were asked to read as carefully as possible an article about Bimboola's society and imagine themselves as being a citizen in the middle class of this society. This article consists of two short paragraphs with inherent contextual logic to each other, providing multiple pieces of evidence to support the idea that economic inequality in Bimboola's society is either high or low. The word “economic inequality” does not appear in the article (for the full text of both conditions, see Appendix S1 and S2).

After the manipulation, participants completed one multiple-choice question (“What class of Bimboola society are you assumed to belong to?”) as a check for the manipulation of economic inequality. Ten participants were excluded because they answered this question incorrectly.⁴

All participants then completed measurements of the other variables. Consistent with previous studies (e.g., Sprong et al., 2019), we used a 2-item scale to measure participants' perceptions of economic inequality in Bimboola to check the effect of the manipulation (e.g., “There is little difference in wealth between the classes of Bimboola society”; 1 = *strongly disagree*, 9 = *strongly agree*, $a = .99$). Following Graham et al. (2009), we used 7 items to measure participants' moral evaluation of the wealthy class of Bimboola (e.g., “kind- malicious”; 1 = *kind*, 10 = *malicious*; $a = .96$). Scores were calculated by adding the score in each item. Higher scores indicated more negative moral evaluation of the economically advantaged group. In addition, consistent with previous studies (Casara et al., 2022), we used four items to measure participants' agreement with UCTs in Bimboola (e.g., “In Bimboola's society, the pharmaceutical industry aims to meet their economic and political goals, even when they are aware that their actions will harm citizens”; 0 = *minimum agreement*, 100 = *maximum agreement*; $a = .97$). We also collected demographic information (e.g., gender, age)⁵ and all participants received a small monetary reward.

⁴If all data are included in statistical analyses, the results are similar.

⁵Participants' social class in the experimental scenario of Study 2 was set to middle class. Consistent with Casara et al. (2022), we did not measure subjective social class, educational background or annual personal income in Study 2.

TABLE 2 Independent samples *t*-tests, descriptive analysis and correlations (Study 2).

	Low economic inequality (<i>N</i> =80)		High economic inequality (<i>N</i> =80)		<i>t</i>	Cohen's <i>d</i>	<i>M</i>	<i>SD</i>	1	2	3
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>							
1. Perceived economic inequality	1.79	0.94	6.57	0.55	39.15***	6.19	4.18	2.52	—	—	—
2. Moral evaluation	7.43	1.59	4.75	1.76	-10.10***	-1.60	6.09	2.15	-.67***	—	—
3. UCTs	22.11	21.31	61.26	21.35	11.61***	1.84	41.69	28.94	.74***	-.68***	—

N/*n*: 0 = low economic inequality and 1 = high economic inequality. To maintain consistency with the logic of Study 1, we transformed scores of moral evaluations in the data analysis (i.e., higher scores indicated more positive moral evaluation of the economically advantaged group).

Abbreviation: UCT1, upward conspiracy theory.

****p* < .001.

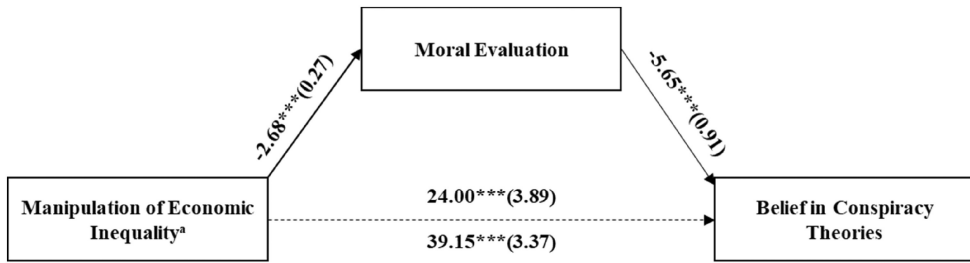


FIGURE 2 Mediation analysis (Study 2). $N=160$. Values are $B(SE)$. ^a0 = low economic inequality and 1 = high economic inequality. To maintain consistency with the logic of Study 1, we transformed scores of moral evaluations in the data analysis (i.e., higher scores indicated more positive moral evaluation of the economically advantaged group). $***p < .001$.

Results

First, we conducted independent-samples t -tests on perceived economic inequality, moral evaluations and UCTs. Participants perceived stronger economic inequality, had more negative moral evaluations and had stronger UCTs, in the high-inequality condition than in the low-inequality condition. This suggests that manipulation was successful and significantly influenced all of the variables in the expected manner. All the variables are significantly correlated (see Table 2).

The PROCESS Model Code (Model 4; Hayes, 2018) for the bruceR package (version 0.8.7; Bao, 2022) in R 4.0 was then used to test the simple mediating effect of economic inequality (0 = low inequality, 1 = high inequality) on UCTs, through moral evaluation. Results (see Figure 2) showed that the total effect was significant ($total\ effect = 39.15$, 95% CI [32.47, 45.63]). Economic inequality negatively predicted moral evaluation ($B = -2.68$, $SE = 0.27$, $p < .001$); in turn, moral evaluation negatively predicted UCTs ($B = -5.65$, $SE = 0.91$, $p < .001$). Moral evaluation mediated the link between economic inequality and UCTs, $indirect\ effect = 15.15$ (38.70% of the total effect), 95% CI [8.71, 22.57], $p < .001$.

Discussion

Replicating and expanding Study 1, Study 2 found that moral evaluation mediates the effect of manipulated economic inequality on UCTs. This suggests that manipulating the level of economic inequality in a fictitious society leads people to have lower moral evaluations of economically advantaged groups, which in turn predicts increased belief in conspiracy theories about them. A limitation of this approach, however, is that a manipulation of economic inequality in a fictitious society lacks sufficient ecological validity. To better test the robustness of our hypotheses in a Chinese context, Study 3 directly manipulated perceptions of economic inequality in Chinese society. Our goal is to further examine whether a higher level of perceived economic inequality in real life leads to lower moral evaluations of economically advantaged groups, which may partially account for the link of economic inequality with belief in conspiracy theories about economically advantaged groups.

STUDY 3

In Study 3, we manipulated participants' perceptions of economic inequality in Chinese society. The manipulation was based on earlier research (Davidai, 2018). After a reading task, participants were asked to rate their perceived economic inequality, moral evaluation of economically advantaged groups and UCTs in Chinese society. We again expected a positive effect of perceived economic inequality on UCTs, with moral evaluation as a mediator.

Method

Participants and design

All participants provided their consent to participate. The study had a design with two conditions (perceived economic inequality in China: high vs. low). Based on the same power analysis as in Study 2, 208 adult participants in mainland China were recruited through Credamo. Data from 17 participants were excluded because they did not meet the data inclusion criteria (see the Study Procedure section below for details). The final sample for data analysis consisted of 191 participants (65 male, 126 female, $M_{\text{age}} = 29.17$, $SD = 7.69$).

Materials and procedure

Adapted from the paradigm of Davidai (2018), participants were asked to read some materials and answer some questions, to understand people's views on the economic situation of Chinese residents. The design here is similar to Study 2, except that the study context is changed to Chinese society (instead of Bimboola's society), for full text and graphs, see Appendix S1 and S2.

After the experimental manipulation, participants completed a “comprehension test” to check comprehension of the division of wealth groups. This question contained four statements about the material we presented, with three correct statements and one incorrect statement (i.e., “The richest group has the same amount of wealth as the poorest group”). Participants were asked to select the incorrect option. We also adapted the measurement of perceived economic inequality from Davidai (2018) as a manipulation check. Participants rated how unequal the distribution of wealth was between different wealth groups in Chinese (1 = *relatively equal distribution of wealth*, 10 = *severely unequal distribution of wealth*). In total, 17 participants were excluded from the data analysis. Specifically, 10 participants did not pass the manipulation check, and 7 participants were excluded for taking less than 2 s to answer more than 50 percent of the questions (excluding demographic variables).⁶

After this, all participants completed measurements of the remaining variables. Moral evaluation was again measured ($\alpha = .94$) with the moral evaluation scale developed by Graham et al. (2009). Through a pilot study, participants were asked to evaluate and supplement what they thought were economically advantaged groups in Chinese (cf. Nera et al., 2021). Ten representative economically advantaged groups such as bankers, entrepreneurs and real estate developers were retained. Scores were calculated by adding the score in each item. Higher scores indicated more negative moral evaluation of the economically advantaged group. In Study 3, the measurement of UCTs included an introductory paragraph: “Some groups are suspected of engaging in secret activities for the benefit of their group, to the detriment of the rest of society Please rate the extent to which you consider it likely that the following groups are secretly working against the majority for their own profit”. Participants were then rated on a scale ranging from 0 (totally impossible) to 100 (totally possible) ten representative economically advantaged groups ($\alpha = .92$). Finally, demographic information was collected and they all received a small monetary reward.

Results

A series of independent-samples *t*-tests were conducted on perceived economic inequality, moral evaluations and UCTs. The results showed that participants perceived more economic inequality, had more negative moral evaluations and stronger UCTs in the high-inequality group than in

⁶The indirect effect still significant if all data were included in the statistical analysis (whether or not subjective social class, educational attainment and income were controlled for).

TABLE 3 Independent samples *t*-tests, descriptive analysis and correlations (Study 3).

	Low economic inequality (<i>N</i> = 95)		High economic inequality (<i>N</i> = 96)		<i>t</i>	Cohen's <i>d</i>	<i>M</i>	<i>SD</i>	1	2	3
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>							
1. Perceived economic inequality	5.44	2.21	8.81	1.20	13.11***	1.90	7.14	2.45	—	—	—
2. Moral evaluation	7.04	1.96	5.51	1.85	-5.55***	-0.80	6.27	2.05	-0.46***	—	—
3. UCTs	59.32	19.34	66.36	15.01	2.81**	0.41	62.86	17.61	.28***	-0.47***	—

N/*n*: 0 = low economic inequality and 1 = high economic inequality. To maintain consistency with the logic of Study 1 and Study 2, we transformed scores of moral evaluations in the data analysis (i.e., higher scores indicated more positive moral evaluation of the economically advantaged group).

Abbreviation: UCT, upward conspiracy theory.

p* < .01; *p* < .001.

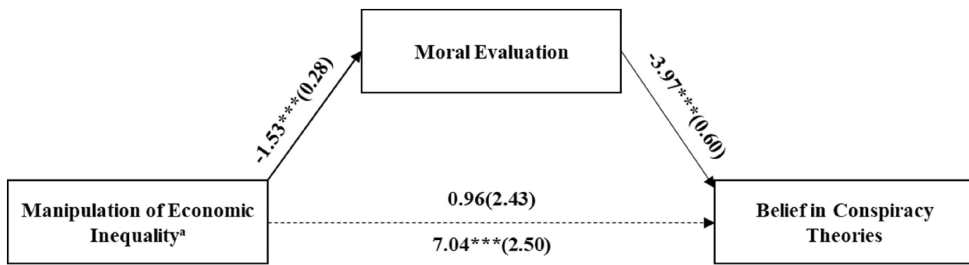


FIGURE 3 Mediation analysis (Study 3). $N = 191$. Values are $B(SE)$. ^a0 = low economic inequality and 1 = high economic inequality. To maintain consistency with the logic of Study 1 and Study 2, we transformed scores of moral evaluations in the data analysis (i.e., higher scores indicated more positive moral evaluation of the economically advantaged group). *** $p < .001$.

the low-inequality group. This suggests that our experimental manipulation was successful and significantly influenced all of the variables in the expected manner. All the variables were significantly correlated (see Table 3).

The PROCESS Model Code (Model 4; Hayes, 2018) for the bruceR package (version 0.8.7; Bao, 2022) in the R 4.0 was used to test the simple mediating effect of economic inequality (0 = *low inequality*, 1 = *high inequality*) on UCTs through moral evaluation. The results (see Figure 3) revealed that the direct effect was insignificant ($B = 0.96$, 95% CI $[-3.37, 5.37]$, $p = .663$). Economic inequality had significant effects on moral evaluation ($B = -1.53$, $SE = 0.28$, $p < .001$), and moral evaluation significantly predicted UCTs ($B = -3.97$, $SE = 0.60$, $p < .001$). Moral evaluation mediated the effect of economic inequality on UCTs, with a mediating effect size of 6.08 (95% CI $[3.41, 9.29]$, $p < .001$), accounting for 86.36% of the total effect (7.04) of economic inequality on UCTs. Even after controlling for subjective social class, education and income, the mediating effect of moral evaluation was still significant, *indirect effect* = 5.73 (83.41% of the total effect; 95% CI $[3.16, 8.94]$, $p < .001$).

Discussion

After manipulating perceived economic inequality in Chinese society, Study 3 again found that moral evaluation mediated the relationship between economic inequality and UCTs. We should note that participants' average perception of economic inequality remained above 5 (on a 10-point scale) even in the low economic inequality condition, suggesting that participants generally agree that China has a high level of economic inequality (Alvaredo et al., 2018). Still, the results show that our manipulation was successful in varying the perceived extent of this inequality.

STUDY 4

In Study 4, we again manipulated Chinese participants' perceptions of economic inequality through experimental method. We again expected a positive effect of perceiving economic inequality on CTs about economically advantaged, with moral evaluation as a mediator. In addition, we added two additional measurements and tests to Study 4. First, given that Casara et al. (2022) found that anomie mediates the effect of economic inequality on conspiracy theory beliefs, in Study 4, we have also measured anomie. This enables us to examine whether this mediating effect still holds in the Chinese context, and whether the effects of moral evaluation are distinct from anomie. Second, we also investigate the relationship between conspiracy theories targeting economically disadvantaged groups (Nera et al., 2021, 2022).

Method

Participants and design

All participants provided their consent to participate. The study had a design with two conditions (perceived economic inequality in China: high vs. low). Based on the same power analysis as in Study 2, 220 participants in mainland China were recruited through Credamo. Data from 10 participants were excluded from the statistical analysis because they did not meet the data inclusion criteria (see the Study Procedure section below for details). The final sample for data analysis consisted of 210 participants (74 male, 136 female, $M_{\text{age}} = 32.07$, $SD = 7.30$).

Materials and procedure

Similar to Study 3, participants were asked to read some materials and answer some questions. The material contains one paragraph of text and one figure (for full text and graphs, see Appendix S1). After the experimental manipulation, participants completed the “comprehension test” to check comprehension of the material. This test contained three questions with one correct statement and three incorrect statements (i.e., “What is the approximate number of people contained in each bar in the graph above?”). Participants were asked to select the correct option. We also adapted the measurement of subject economic inequality from Côté et al. (2015) as a manipulation check. All participants were asked to report their perception of economic inequality by answering a 9-point Likert scale question (1 = *equal*, 9 = *unequal*). Ten participants were excluded from the data analysis. Specifically, 2 participants were not between the ages of 18–60, and 8 participants failed the attention test.⁷

After this, all participants completed measurements of the remaining variables.⁸ The measurement of moral evaluation was similar to Study 3 ($a = .97$). Anomie was assessed using the measure of Teymoori et al. (2016). The measurement consisted of 12 items (e.g., “People think that there are no clear moral standards to follow”; 1 = *strongly disagree*, 7 = *strongly agree*, $a = .94$). The measurement of conspiracy beliefs for economically advantaged ($a = .95$) and disadvantaged ($a = .94$) groups⁹ were similar to Study 3. We follow the terms of Nera et al. (2021), referring to the latter as downward conspiracy theories (hereafter referred to as DCTs). Demographic information was also collected. After completing all the measurements, participants were paid a small amount of money.

Results

A series of independent-samples *t*-tests were conducted on perceived economic inequality, moral evaluation, anomie, UCTs and DCTs. The results showed that participants perceived more economic inequality, had more negative moral evaluations, higher anomie, and had stronger UCTs and DCTs in the high-inequality group than in the low-inequality group. This suggests that our experimental manipulation was successful and significantly influenced all of the variables in the expected manner. All the variables were significantly correlated (see Table 4).

We included anomie as another mediator in a parallel mediation analysis. The PROCESS Model Code (Model 4; Hayes, 2018) for the bruceR package (version 0.8.7; Bao, 2022) in the R 4.0 was used to test the

⁷When all data were included ($N = 220$), results were consistent with formal analysis ($N = 210$). More detailed information can be found in Section 1 of Appendix S2.

⁸We also measured competency evaluation of economically advantaged groups and tested its mediating effect on the relationship between economic inequality and UCTs. The results showed that its mediation effect was insignificant. More details are available in Section 4 of Appendix S2.

⁹Through a pilot study, participants were asked to evaluate and supplement what they thought were economically disadvantaged groups in Chinese society (cf. Nera et al., 2021). Ten representative economically advantaged groups such as unemployed people, disabled people and rural migrant workers were retained.

TABLE 4 Independent samples *t*-tests, descriptive analysis and correlations (Study 4).

	Low economic inequality (N=104)		High economic inequality (N=106)		Cohen's <i>d</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>								
1. PEI ^a	3.92	2.62	7.57	1.52	1.70	5.76	2.81	—	—	—	—	—
2. ME ^b	8.24	2.16	5.73	2.83	-1.00	6.97	2.81	-.71***	—	—	—	—
3. AN ^c	2.20	0.90	2.78	1.57	0.45	2.49	1.31	.46***	-.64***	—	—	—
4. UCT's	41.74	23.32	53.39	23.32	0.50	47.62	23.99	.50***	-.67***	.62***	—	—
5. DCT's	18.60	12.92	23.11	18.97	0.28	20.87	16.37	.25***	-.34***	.50***	.54***	—

Note: 0 = low economic inequality and 1 = high economic inequality. To maintain consistency with the logic of Study 1–3, we transformed scores of moral evaluations in the data analysis (i.e., higher scores indicated more positive moral evaluation of the economically advantaged group).

Abbreviations: DCT, downward conspiracy theory; UCT, upward conspiracy theory.

^aPerceived economic inequality (named in the data frame as “check”).

^bMoral evaluation about economically advantaged groups.

^cAnomic.

* $p < .05$; ** $p < .01$; *** $p < .001$.

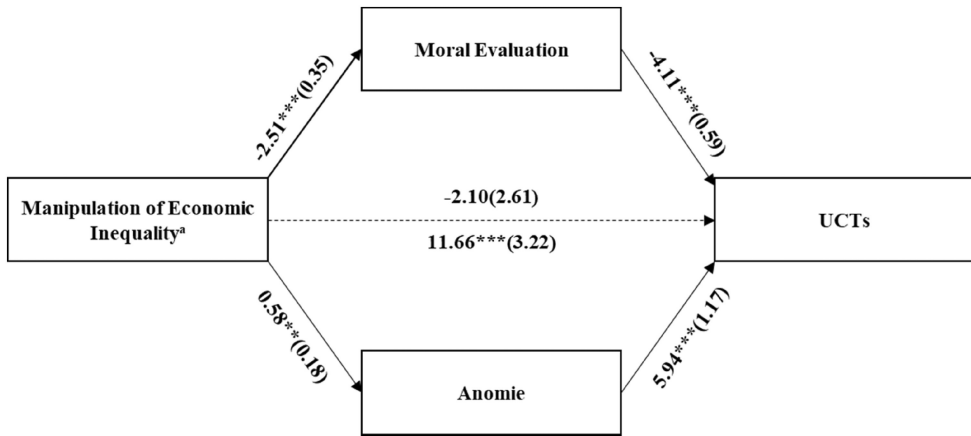


FIGURE 4 Parallel multiple mediation analysis (Study 4). $N=210$. Values are $B(SE)$. ^a0 = low economic inequality and 1 = high economic inequality. To maintain consistency with the logic of Study 1–3, we transformed scores of moral evaluations in the data analysis (i.e., higher scores indicated more positive moral evaluation of the economically advantaged group). ** $p < .01$; *** $p < .001$. UCT, upward conspiracy theory.

parallel mediating effect of economic inequality (0 = *low inequality*, 1 = *high inequality*) on UCTs through moral evaluation and anomie. The results (see Figure 4) revealed that the direct effect of economic inequality was insignificant ($B = -2.10$, 95% CI $[-7.38, 3.45]$, $p = .450$). Economic inequality negatively predicted moral evaluation ($B = -2.51$, $SE = 0.35$, $p < .001$) and positively predicted anomie ($B = 0.58$, $SE = 0.18$, $p < .01$); in turn, moral evaluation negatively predicted UCTs ($B = -4.11$, $SE = 0.59$, $p < .001$), anomie positively predicted UCTs ($B = 5.94$, $SE = 1.17$, $p < .001$). Moral evaluation and anomie both mediated the link between economic inequality and UCTs; the indirect effect of moral evaluation was 10.31 (95% CI $[6.73, 14.40]$, $p < .001$); the indirect effect of anomie was 3.45 (95% CI $[1.55, 5.40]$, $p < .001$). The mediating effect of moral evaluation is 2.99 times greater than that of anomie. Even after controlling for subjective social class, education and income, the mediating effect of moral evaluation (*indirect effect* = 10.07, 95% CI $[6.62, 13.82]$, $p < .001$) and anomie (*indirect effect* = 2.66, 95% CI $[1.09, 4.36]$, $p = .002$) were still significant.

We then conducted an exploratory analysis with DCTs as a dependent variable, economic inequality as an independent variable, and moral evaluation and anomie as parallel mediators. The results (see Figure 5) revealed that the direct effect was insignificant ($B = 0.67$, 95% CI $[-3.50, 4.92]$, $p = .751$). The indirect effect of anomie was 3.46 (95% CI $[1.08, 6.55]$, $p = .014$), accounting for 76.72% of the total effect (4.51) of economic inequality on DCTs. The mediating effect of moral evaluation was insignificant (*indirect effect* = 0.38, 95% CI $[-1.74, 2.49]$, $p = .724$). Even after controlling for subjective social class, education and income, the mediating effect of anomie (*indirect effect* = 3.51, 95% CI $[1.08, 6.78]$, $p = .017$) was still significant. And the indirect effect of moral evaluation was still insignificant (*indirect effect* = 0.68, 95% CI $[-1.33, 2.67]$, $p = .511$). The results showed that anomie mediated the link between economic inequality and DCTs, while the mediation of moral evaluations was insignificant.

Discussion

In Study 4, we again manipulated economic inequality perception in the Chinese context using a different (especially compared to Study 2) approach.¹⁰ Once again, our findings demonstrated a relationship between economic inequality and UCTs, which was mediated by moral evaluations. Furthermore, moral evaluations

¹⁰The difference between Study 4 and the previous manipulation is not just the change in form from pie charts to bar charts. The high-inequality condition in Study 4 is close to, but higher than, the actual inequality in China, while the low inequality is lower than the inequality in Sweden shown in the previous study (Côté et al., 2015, Study 2).

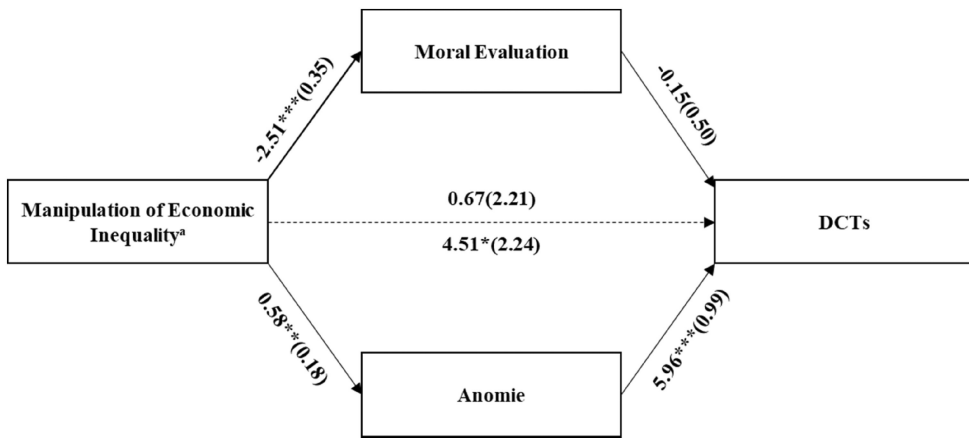


FIGURE 5 Parallel multiple mediation analysis (Study 4). $N=210$. Values are $B(SE)$. ^a0 = low economic inequality and 1 = high economic inequality. To maintain consistency with the logic of Study 1–3, we transformed scores of moral evaluations in the data analysis (i.e., higher scores indicated more positive moral evaluation of the economically advantaged group). * $p < .05$; ** $p < .01$; *** $p < .001$. DCT, downward conspiracy theory.

played a stronger role than anomie in the connection between economic inequality and UCTs. Moreover, our research uncovered that anomie, but not moral evaluations, mediated the relationship between economic inequality and DCTs. This finding is similar to the results of Casara et al. (2022), although they did not distinguish between different types of conspiracy beliefs. This suggests that the psychological mechanisms driving different types of conspiracy beliefs vary – specifically, between upward conspiracy beliefs and downward conspiracy beliefs. This observation is consistent with the findings of Nera et al. (2021).

GENERAL DISCUSSION

Previous studies have found that economic inequality stimulates increased conspiracy beliefs (Casara et al., 2022), but the underlying psychological mechanisms have not been fully explored (Jetten et al., 2022). Moreover, there is a lack of evidence from Eastern countries, especially countries like China that have rapid economic growth but also substantial social tensions (such as extensive corruption). It is therefore important to explore how economic inequality affects Chinese people's belief in conspiracy theories. Based on Social Identity Theory, the current research found that economic inequality increases people's belief in conspiracy theories about wealthy groups, and that this effect is mediated by moral evaluation of these groups. Study 1 found evidence for these ideas in a correlational design. In Studies 2, 3 and 4 the hypotheses were further supported by manipulating participants' perceptions of economic inequality.

The present results are consistent with the notion that economic inequality leads to negative moral evaluations of high social classes (Tanjitpiyanond et al., 2022). In addition, studies have shown that moral evaluation of economic advantaged groups significantly predict conspiracy beliefs (Cordonier et al., 2021; van Prooijen & Jostmann, 2013). The current research is hence well-grounded in earlier work but also expands it by identifying the mediating role of moral evaluation in the relationship between economic inequality and belief in conspiracy theories. More generally, the findings are consistent with the notion that economic inequality poses a potential societal threat to people, leading to negative moral evaluation of economically advantaged groups, which in turn predicts increased conspiracy theories about these groups.

The more specific contributions of the current research are twofold. First, in previous studies, results have supported the idea that those in disadvantaged positions are more likely to believe in conspiracy theories (van Prooijen, 2017; van Prooijen & Douglas, 2018). The current research underscores that conspiracy theories cannot be attributed solely to individuals in disadvantaged positions. Instead, the

present findings are consistent with earlier research showing that structural social factors (e.g., economic inequality) can contribute to conspiracy beliefs (Casara et al., 2022; Hornsey et al., 2022; Jetten et al., 2022). Moreover, our study also extends this earlier work by indicating that the influence of economic inequality on conspiracy beliefs is partly due to more negative moral evaluations of economically advantaged groups. This enables a more in-depth understanding of the psychological processes through which economic inequality affects conspiracy beliefs.

Second, participants in previous studies that have examined the link between economic inequality and conspiracy beliefs came from developed Western countries such as Australia, the United States and Italy. For the first time, we obtain experimental evidence on the relationship between economic inequality and conspiracy beliefs among participants from China. Like other negative pervasive effects of economic inequality, such as higher rates of homicide, greater consumer debt, increased risk-taking behaviour and shorter life expectancies (Daly, 2017; Frank, 2013; Payne et al., 2017; Pickett & Wilkinson, 2015), the effect of economic inequality on conspiracy beliefs can occur across cultures, and in societies with different levels of economic development.

Limitations

It should be noted that the current research has some limitations. First, previous research suggests that cultural factors play an important role in shaping conspiracy theory beliefs. For example, van Prooijen and Song (2021) found that the cultural dimensions power distance values and vertical collectivism could explain why different cultural samples (Chinese vs. American) believed in intergroup conspiracy theories. Furthermore, a meta-analysis found that conspiracy beliefs were positively linked to collectivism and masculinity (Adam-Troian et al., 2021). While collecting data on these issues from Chinese samples may be regarded a strength, a limitation is that our studies did not examine differences between Chinese versus Western participants. The impact of such differences on the relationship between economic inequality and conspiracy theories is hence not yet well understood.

Second, although our theoretical model is supported by our four studies, we did not provide experimental evidence of a causal link between moral evaluation and conspiracy beliefs. As suggested by Fiedler et al. (2018), we switched the position of moral evaluation and conspiracy beliefs in the mediation model among the four studies and then conducted the mediation analysis. The results convinced us that the current mediation model (rather than the reverse mediation model) is more plausible (see Section 2 in Appendix S2 for more details). In any case, however, it should be acknowledged that the present studies did not provide experimental evidence for the relationship between the two. Future research could use experimental causal chain designs or longitudinal follow-up studies to test the mediation effect of moral evaluation between inequality and conspiracy belief (Fiedler et al., 2018; Wen & Ye, 2014).

Third, we only assessed economic inequality as an individual-level factor. Researchers have found that conspiracy theories are not only shaped by individual differences, but that social-level factors such as economic institutions, cultural values and political realities influence the emergence of conspiracy beliefs (Biddlestone et al., 2020; Hornsey & Pearson, 2022; van Prooijen & Song, 2021). However, as of now, the evidence on the relationship between objective economic inequality and conspiracy theory beliefs is weaker at the national level compared to the individual level (Hornsey et al., 2022; Hornsey & Pearson, 2022). Thus, how objective economic inequality is linked to conspiracy theories through social-level processes is a valuable question for future research.

Concluding remarks

The conclusion that economic inequality increases conspiracy theories lacks evidence from Eastern countries, and the psychological mechanisms underlying this relationship are not yet fully understood. Belief in conspiracy theories is partly an intergroup phenomenon, as conspiracy beliefs can be seen as

a form of intergroup threat which may emerge from feeling of intergroup hate and prejudice (Imhoff et al., 2022; van Prooijen & van Lange, 2014). Our results inform these issues by showing that economic inequality predicts belief in conspiracy theories about economically advantaged groups and moral evaluations mediate this effect. Building a more egalitarian society therefore may be an important strategy to counter conflict between various societal subgroups and reduce the spread of conspiracy theories.

AUTHOR CONTRIBUTIONS

Zhao-Xie Zeng: Conceptualization; data curation; formal analysis; funding acquisition; investigation; methodology; project administration; software; validation; visualization; writing – original draft; writing – review and editing. **Cai-Yu Tian:** Conceptualization; data curation; formal analysis; investigation; methodology; project administration; software; validation; visualization; writing – original draft; writing – review and editing. **Jia-Yan Mao:** Conceptualization; formal analysis; funding acquisition; methodology; project administration; resources; supervision; validation; writing – original draft; writing – review and editing. **Jan-Willem van Prooijen:** Supervision; validation; writing – review and editing. **Yue Zhang:** Conceptualization; methodology; software. **Shen-Long Yang:** Conceptualization; writing – review and editing. **Xiao-Na Xie:** Conceptualization; methodology; software. **Yong-Yu Guo:** Funding acquisition; project administration; resources; supervision.

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CONFLICT OF INTEREST STATEMENT

All authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available on the Open Science Framework at https://osf.io/zv6ym/?view_only=f810ab73267c49eb98b9cbac43393c29.

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