Introduction
In recent decades, as wealth disparities have increased around the world, economic inequality has deeply concerned social scientists. Ample evidence shows that economic inequality is associated with a series of social problems, such as poorer health (e.g., Kawachi & Kennedy, 1999; Layte & Whelan, 2014; Pickett & Wilkinson, 2015), lower levels of civic participation (e.g., Lancee & van de Werfhorst, 2012; Uslaner & Brown, 2005), higher crime rates (e.g., Choe, 2008; Hsieh & Pugh, 1993), and increased school bullying (e.g., Elgar et al., 2009; Elgar et al., 2013). In addition to these macro social outcomes, an increasing number of studies also explore the relationship between economic inequality and psychosocial processes. For example, people in regions with high economic inequality show stronger risk preference (Payne et al., 2017) and seek positional goods (e.g., designer brands, luxury clothing) more frequently (Walasek & Brown, 2015, 2016). However, our knowledge about the association between economic inequality and social cognition remains relatively poor. In the current research, we aim to investigate how economic inequality as a social-environmental factor promotes social vigilance.

Economic Inequality and Perceived Normative Climate
Economic inequality depicts the degree of wealth disparities between groups (Buttrick et al., 2017). Wilkinson and Pickett (2017) argue that in different hierarchical contexts, human beings develop different social strategies for survival, reproductive success and well-being. Because maintaining or improving status while avoiding the risk of attacks by dominants is very important in a social environment with stronger dominance hierarchies (i.e., high levels of economic inequality), people generally adopt social strategies based on dominance and competition. In contrast, social strategies based on reciprocity and cooperation are appropriate in more egalitarian societies (i.e., low levels of economic inequality) (Wilkinson & Pickett, 2017). Some studies have validated these assumptions. For example, citizens in economically unequal societies are less willing to trust and cooperate with others than those in more equal societies (e.g., Côté House, & Willer, 2015; Elgar & Aitken, 2011; Kawachi et al., 1997; Nishi et al., 2015). In the United States, residents living in states with higher inequality are less likely to participate in heterogeneous communities (Alesina & La Ferrara, 2000). Moreover, economic inequality is linked to individuals’ self-perceptions. Specifically, people living in societies with more income inequality displayed stronger self-enhancement bias compared to people living in societies with less inequality (Loughnan et al., 2011).

Social strategies adopted by most people in a society with different inequality levels in turn shape individuals’ intersubjective perceptions, which refer to perceptions about popular personal beliefs and values in a particular context (Chiu et al., 2010). Following the intersubjectivity approach, because people in a highly unequal environment usually give priority to their own wealth and are less cooperative with others, individuals may infer that a stronger competitive culture exists in highly unequal settings. For example, participants inferred that most people in a society with high inequality hold more
self-enhancement values guiding dominant and competitive behaviors and less self-transcendence values guiding reciprocity and sharing behaviors (Sánchez-Rodriguez et al., 2020). Some studies also provided direct evidence, that is, they showed that a context with high economic inequality was perceived as having stronger competitive and weaker cooperative norms than in more equal settings (Sánchez-Rodriguez et al., 2019c; Sommet et al., 2019). However, it remains unclear how people respond to the perception of this normative climate. In the present research, we proposed that the perception of competitive norms caused by economic inequality raises individuals’ threat detection system (i.e., vigilant social cognition) to cope with potential harm from others.

**Economic Inequality, Perceived Competition and Social Vigilance**

In a highly unequal context, people tend to construe social relationships as competitive rather than cooperative, that is, one person’s success possibly comes at the expense of others (Johnson & Johnson, 1974). Therefore, individuals perceive more interpersonal tension in a highly unequal context, which increases their expectation of others’ hostility and aggression. This social cognitive tendency to anticipate threat from others is known as social vigilance (Liu et al., 2019). Individuals with high vigilance are more likely to expect others to harm them (i.e., over-attributing hostile motives to others) (Li et al., 2015; Liu et al., 2019). Cultural psychology studies found that compared to North Americans, East Asians (e.g., people from Hong Kong) are more vigilant in their close relationships, believing that their acquaintances, friends, and relatives harbor hatred and ill will toward themselves (Li et al., 2015). In the current study, we consider that individuals overattribute hostile motives to people in high-inequality (vs. low-inequality) settings.

Although no prior empirical studies examined the effect of economic inequality on social vigilance, indirect evidence supports this idea. For example, individuals living in a highly unequal society were perceived as more prototypically masculine than feminine (Moreno-Bella et al., 2019). Masculinity was generally related to self-directed and aggressive tendencies, whereas femininity was generally associated with being tender and caring about others’ needs and well-being (Annandale & Hunt, 1990; Weisgram et al., 2011). Thus, people with more masculine characteristics are seen as more threatening. Studies on intergroup relationships also found that competitive out-groups are viewed as having more negative intentions, which results in prejudice that would decrease prosociality toward out-group members and even result in violent behavior (Fiske et al., 2002; Islam & Hewstone, 1993; Stephan & Stephan, 2000). In addition, a great deal of literature has found a negative association between economic inequality and trust at the macrolevel (e.g., Elgar & Aitken, 2011; Fairbrother, & Martin, 2013; Uslaner & Brown, 2005).

In sum, we propose two hypotheses: (a) individuals are more vigilant against people in a more unequal context than those in a more equal context; and (b) perceived competition can explain this effect. Specifically, because people believe that more social competition exists in more unequal contexts, they show greater social vigilance.

**The Present Study**

A growing body of studies has explored the relationship between economic inequality and psychosocial processes, but to date, most of these studies provided correlational evidence and utilized an objective level of inequality (e.g., Gini coefficient) at the regional level. A subjective level of economic inequality imperfectly reflects an objective level of inequality. For example, American citizens generally underestimate the actual level of wealth inequality in the United States (Norton & Ariely, 2011). Moreover, compared with the objective level of inequality, individuals’ subjective perception of inequality seems to more strongly predict psychological consequences (Davda, 2018; Hauser & Norton, 2017). Thus, it is essential to analyze the influence of a microlevel experience of inequality on psychological consequences (Browniannuzzi et al., 2017; Kim & Na, 2018). In the present study, we used experimental methods to manipulate the perception of economic inequality and then examined its effects on individuals’ social cognition. Specifically, we hypothesized that individuals show higher social vigilance in societies with higher inequality than in societies with lower inequality and that perceived higher competition is a mediating mechanism. We examined the predictions across three experiments. Specifically, Experiment 1 manipulated economic inequality in workplaces to examine inequality’s effect on social vigilance. Experiment 2 created a fictitious society to manipulate the level of economic inequality to replicate Experiment 1’s results and examine the mediating effect of perceived competition. Because the scenarios we used to measure social vigilance in Experiments 1 and 2 included obvious competitive cues (i.e., the characters in the scenarios have objective competitive relationships), Experiment 3 reconfirmed the robustness of the results in a situation where no competitive cues exist.

**Experiment 1**

In Experiment 1, we preliminarily examined the causal relationship between economic inequality and social vigilance by creating three workplace scenarios to manipulate the level of inequality. We hypothesized that participants tend to overattribute hostile motives to people in workplaces with high inequality more than in workplaces with low inequality.

**Methods**

**Participants** We sampled 144 participants who participated in the experiment online through a recruiting platform; participants received CNY4 as compensation. Three participants did not finish the experiment and were excluded from the data analysis. The remaining sample was composed of 141 participants (62 men, 79 women; \(M_{\text{age}} = 27.04, SD = 5.16\)). Sixty-nine participants were assigned to the high-inequality condition, whereas 72 participants were assigned to the low-inequality condition. A sensitivity analysis using G Power 3.1 (Faul et al., 2009), assuming two-tailed \(\alpha = 0.05\) and 80% power, revealed a minimum effect size of \(f = 0.24\).
Procedure and materials
Participants completed all experimental procedures via the Qualtrics Survey System. Participants were given three workplace stories adapted from a previous study (Liu et al., 2019, Study 3); each story included two different versions (high vs. low inequality). Depending on which situation condition participants were in, they read one of the following versions of the stories. For example, two versions of the accountant story are as follows:

Wang Hua works for an accounting company. The monthly salary of his department is divided into three levels, and his income falls within the second level in his department (see Figure 1). Recently, there was a chance for promotion in his department. The promotion was based on his boss’s rating of performance. Wang Hua’s rating was stellar last year, and one of his colleagues’ rating was similar. They both had a good chance of being promoted. Last week, Wang Hua started to work on a complex and important project. His colleague offered to informally check over some technical parts that Wang Hua was not sure if he had designed correctly.

In each story, the second level of income (or bonus) was the same. All three income levels add up to the same amount of money in both distributions. However, the gap between the second level and the first (or third) level in the high-inequality condition was five times larger than the gap in the low-inequality condition.

To check whether participants read the material carefully, they were asked, ‘Which income level does Wang Hua belong to?’ (1, 2 or 3). Participants who answered incorrectly were unable to continue answering the questionnaire.

Next, participants were asked two items: ‘How likely do you think it is that the colleague will secretly sabotage Wang Hua’s project?’ and ‘How likely do you think it is that the colleague will undermine Wang Hua’s project?’ (1 = very unlikely, 7 = very likely). The two items’ ratings were collapsed into a single index ($\alpha = 0.87$). At the end of the experiment, participants reported their gender, age and subjective social class (SSC) using the MacArthur Scale (Adler et al., 2000).

Results and Discussion
Manipulation check We recruited 73 participants (28 men, 45 women; $M_{age} = 25.63, SD = 7.21$) to evaluate the extent of the wealth gap in each scenario (1 = very small, 7 = very large). The results found that compared to the low-inequality condition ($M = 3.17, SD = 0.95$), participants in the high-inequality condition perceived more wealth disparity ($M = 4.94, SD = 1.02$), $t(71) = 7.23, p < 0.001$, Cohen’s $d = 1.81$.

Social vigilance We conducted an ANCOVA (control variables: age, gender and SSC) and identified the predicted effect of economic inequality, $F(1, 136) = 5.25, p = 0.023$, $\eta^2 = 0.04$, such that participants in the high-inequality condition were more likely to anticipate that the protagonist’s colleague would secretly act against the protagonist’s interests ($M = 4.26, SD = 1.29$) than those in the low-inequality condition ($M = 3.74, SD = 1.38$).

Experiment 1 tested the relationship between economic inequality and social vigilance by manipulating the extent of the differences in income distribution in workplaces. Specifically, participants attributed more hostile intentions to people in a high-inequality environment than to those in a low-inequality environment. However, Experiment 1’s paradigm introduced an additional factor: upward mobility, which may leave this study’s results open to other explanations. For instance, the result may be due to the difference in the amount of wealth each condition earns as a result of promotion (3,500 vs. 700), regardless of the level of economic inequality. In addition, because high inequality reduces belief in economic mobility.

![Figure 1: Incomes for Different Experimental Condition in Experiment 1.](image)

*Note:* Different income levels are shown for high-inequality condition and low-inequality condition. All the three income levels add up to the same amount of money in both experimental conditions.
(Davidai, 2018), higher social vigilance of participants in the high-inequality condition may be due to lower mobility beliefs. Finally, because these scenarios highlight the opportunity for upward mobility, participants were more likely to make upward rather than downward comparisons. Although people generally make upward rather than downward comparisons (e.g., Festinger, 1954; Payne et al., 2017; Sánchez-Rodríguez, et al., 2019a), wealthy group members fear downward mobility (Jetten et al., 2020). In the following research, we avoid introducing upward mobility cues in the experimental materials. Besides, Experiment 1 did not explore the psychological mechanism underlying the observed results. We proposed that high economic inequality leads people to perceive a more competitive normative climate, which promotes social vigilance. Experiment 2 was conducted to test this mediation model.

**Experiment 2**

Experiment 2 created a fictitious society that manipulated the level of economic inequality. Except for reexamining the relationship between economic inequality and social vigilance, Experiment 2 further investigated the mediating role of perceived competition. In a highly unequal environment, because individuals perceive higher social competition, they become more wary of others. We predicted that participants in the high-inequality condition perceive more competition than those in the low-inequality condition, which could explain why people in a society with higher economic inequality have more social vigilance.

**Methods**

**Participants** We recruited 129 participants through an online subject pool. Two participants did not complete the experiment and were thus excluded from all analyses. The final sample included 127 participants (43 men, 84 women; $M_{age} = 27.20$, $SD = 6.06$). Sixty-four participants were assigned to the high-inequality condition, and 63 participants were assigned to the low-inequality condition. All participants were randomly assigned to the high- or low-inequality condition and were told that they belonged to the middle-income level. Next, to enhance the manipulation’s authenticity, we instructed participants to purchase three necessities they could afford before starting a new life, such as a house, mode of transportation and vacation. Three options for each necessity were given for each income level. Participants only choose goods the middle-income group could afford. All items in the middle-income level were the same in both conditions. However, the items in the first income level in the high-inequality condition were more luxurious than those in the low-inequality condition, and the items in the third income level in the high-inequality condition were shabbier than those in the low-inequality condition.

To check whether participants read the materials carefully, they were asked, ‘In Bimboola, which income level were you assigned to?’ (1, 2 or 3). Participants who answered incorrectly were unable to continue answering the questionnaire. Next, to determine whether our economic inequality manipulation was successful, participants were also asked to respond to the following questions, ‘To what extent is Bimboola’s economic distribution unequal?’ (1 = not unequal at all, 9 = very unequal).

Next, participants completed a 5-item perceived competition scale (Murayama & Elliot, 2012; 1 = strongly disagree, 7 = strongly agree; $\alpha = 0.95$). Sample items include, ‘In Bimboola, it seems that I am competing with others’ and ‘In Bimboola, people seem to value competition.’

We assessed social vigilance using methods adapted from past research (Liu et al., 2019, Study 1). Participants

![Figure 2: Economic structure of Bimboola.](image)

*Note: Bim = Bimbolean dollars. All the three income groups add up to the same amount of money in both distributions.*
read three scenarios about social competition occurring in Bimboola, such as students competing for employment, officials competing for promotions and company employees competing for a bonus. Here, is the student scenario:

In Bimboola, Li Li is a college student about to graduate. He and several other students in the same major received an interview invitation from a well-known company. Only one of them will finally be hired. How likely is Li Li to behave unethically in order to be hired?

After reading each scenario, participants were required to anticipate how likely the protagonist was to behave unethically (1 = very unlikely, 7 = very likely; α = 0.89).

Finally, participants reported their gender, age and subjective social class (Adler et al., 2000).

Results and Discussion

Manipulation check An independent-samples t test revealed that participants in the high-inequality condition perceived more inequality (M = 7.16, SD = 1.37) than those in the low-inequality condition (M = 3.97, SD = 2.06), t(125) = 10.30, p < 0.001, Cohen’s d = 1.83.

Perceived competition Using an ANCOVA (control variables: age, gender and SSC), we found that participants perceived stronger competition in Bimboola in the high-inequality condition (M = 5.56, SD = 0.93) than in the low-inequality condition (M = 3.65, SD = 1.38), F(1, 122) = 86.89, p < 0.001, η² = 0.41.

Social vigilance We conducted an ANCOVA (control variables: age, gender and SSC) to examine the effect of economic inequality on social vigilance. Participants in the high-inequality group were more likely to suspect that the protagonists would behave unethically (M = 4.44, SD = 1.41) than those in the low-inequality group (M = 3.26, SD = 1.25), F(1, 122) = 23.21, p < 0.001, η² = 0.16.

Mediation An analysis using the PROCESS macro (model 4) for SPSS (Hayes, 2013) was conducted to test the mediating role of perceived competition (see Figure 3). The result showed that the indirect effect was significant (b_{indirect effect} = 1.69, SE = 0.70, 95% CI [0.46, 3.19]), and the direct effect was nonsignificant (b_{direct effect} = 1.78, SE = 0.92, 95% CI [0.03, 3.60]). These findings indicated that perceived competition mediates the relationship between economic inequality and social vigilance.

Experiment 2’s results indicated that economic inequality affects individuals’ social vigilance; that is, participants anticipated that people were more likely to behave unethically due to self-interest in the high-inequality condition than in the low-inequality condition. In addition, Experiment 2’s results extended Experiment 1’s findings by revealing that perceived competition mediates the relationship between economic inequality and social vigilance. In other words, individuals perceived greater interpersonal competition in a highly unequal society and therefore had higher vigilance toward others. However, one limitation of Experiments 1 and 2 is that all scenarios were competitive. It is not clear whether economic inequality’s effect on social vigilance can extend to noncompetitive situations. Therefore, in Experiment 3, we further examined the link between economic inequality, perceived competition and social vigilance in an ambiguous situation.

Experiment 3

Although Experiments 1 and 2 revealed perceived economic inequality’s effect on social vigilance via different experimental paradigms, the scenarios we used to measure dependent variables included obvious competitive cues. That is, the protagonists in these scenarios have definite competitive relationships with others. We are not sure if this effect can be generalized to more ambiguous situations. Therefore, Experiment 3 examined whether economic inequality affects individuals’ anticipation of threats from others in a noncompetitive situation. We hypothesized that individuals would still be more vigilant of people with whom they have no clear competitive relationship in a high-inequality society than those in a low-inequality society. In addition, perceived competition can still mediate the relationship between economic inequality and social vigilance in an ambiguous context.

Figure 3: Mediation Model of Experiment 2.

Note: The indirect effect of economic inequality on social vigilance via perceived competition shown above was significant. Coefficients presented are unstandardized linear regression coefficients. The value inside parentheses indicates the total effect.

* p < 0.05. ** p < 0.01. *** p < 0.001.
Methods

Participants

Participants (N = 125, 48 male, M_age = 29.57, SD = 5.79) completed the experiment via the Qualtrics Survey System. Fifty-eight participants were assigned to the high-inequality condition, and 67 participants were assigned to the low-inequality condition. They received CN¥3.5 as compensation. Using G*Power 3.1 (Faul et al., 2009), a sensitivity analysis revealed that the minimal detectable effect (f) was 0.25 with a power (1 − β) of 0.80 and α = 0.05.

Procedure and materials

We presented participants with three pie charts depicting wealth distribution in three anonymous countries (Country M, Country L, and Country K) (Heiserman & Simpson, 2017). Participants were told that this study's aim is to investigate how people form impressions about countries, people and events with limited information. To prevent different levels of economic inequality from causing assumptions about other characteristics of these countries, participants were told that these countries have similar political systems, religious beliefs and GDP per capita. Participants were told that they would be asked to answer questions about Country M, which, depending on the condition, was either described as having high or low wealth inequality relative to the other two countries.

The pie chart is divided into five slices, each representing the proportion of wealth owned by each quintile of the population. In the higher-inequality chart (see Figure 4B), the proportions of wealth owned by each quintile were 1%, 3%, 4%, 11% and 81%. This distribution compares to the actual wealth distribution in the United States, which is 0.1%, 0.2%, 4%, 11% and 84%, respectively (Norton & Ariely, 2011). Because the proportion of wealth owned by the two poorest quintiles is difficult to show visually in a pie chart, we made minor adjustments. In the lower-inequality chart (see Figure 4A), the proportions were 11%, 15%, 18%, 21% and 35%, respectively, which are similar to Sweden’s (Norton & Ariely, 2011). To add to the comparative information, we also presented a pie chart of moderate inequality (5%, 8%, 12%, 19% and 56%). To check whether the participants correctly understood the information, participants in the high-inequality condition were asked, ‘Which country has the most unequal distribution?’ Participants in the low-inequality condition were asked, ‘Which country has the most equal distribution?’ Participants who answered incorrectly stopped answering the questionnaire.

After the manipulation and comprehension checks, participants completed the same perceived competition scale used in Experiment 2 (α = 0.93). For example, ‘Residents in Country M seem to value competition.’

Figure 4: Manipulation Materials in Experimental 3.

Note: The distribution of wealth in three anonymous countries are shown for different inequality condition. Participants were asked to answer questions about Country M in both inequality experimental conditions. Panel A: Low-inequality condition. Panel B: High-inequality condition.
Next, we provided a story about a situation happening in Country M. It is as follows:

Mr. A is a citizen living in Country M. He is 32 years old and works for an Internet company. Last week, Mr. A began to work on a complex and important project. However, the computer he used to analyze data was broken recently. Colleague B said that Mr. A could transfer the data to him for analysis.

Similar to Experiment 1, we measured participants' anticipation about others' negative intentions using three items (α = 0.91). The three items are as follows: 'How likely do you think it is that colleague B really wants to help Mr. A?'; 'How likely do you think it is that colleague B will secretly sabotage Mr. A’s project?' and 'How likely do you think it is that colleague B will undermine Mr. A’s project?' (1 = very unlikely, 7 = very likely). In addition, participants were asked, 'If you were Mr. A, to what extent would you be willing to give the project data to colleague B?' (1 = not at all, 7 = very willing).

Finally, participants filled out a demographic questionnaire indicating their age, gender, income, education and subjective socioeconomic status (Adler et al., 2000).

Results and Discussion

Manipulation check An independent sample t test revealed that participants in the high-inequality condition (M = 8.28, SD = 1.37) felt that the distribution in Country M was even more uneven than that in the low-inequality condition (M = 3.61, SD = 1.67), t(123) = 17.13, p < 0.001, Cohen’s d = 3.03.

Perceived competition An ANCOVA (control variables: age, gender, income, education and SSC) revealed that participants believed that stronger social competition existed in Country M in the high-inequality condition (M = 4.99, SD = 1.54) than in the low-inequality condition (M = 3.95, SD = 1.52), F(1, 118) = 12.03, p < 0.001, η² = 0.09.

Hostile attribution An ANCOVA (control variables: age, gender, income, education and SSC) revealed that participants in the high-inequality condition were more likely to anticipate that colleague B would secretly sabotage Mr. A’s project (M = 4.40, SD = 1.48) than those in the low-inequality condition (M = 3.17, SD = 1.51), F(1, 118) = 17.63, p < 0.001, η² = 0.12.

Behavioral intention An ANCOVA (control variables: age, gender, income, education and SSC) revealed that participants in the high-inequality condition (M = 4.45, SD = 1.81) were more reluctant to give the data to Colleague B than those in the low-inequality condition (M = 3.21, SD = 1.37), F(1, 118) = 15.11, p < 0.001, η² = 0.10.

Mediation A bootstrapping mediation analysis with 5000 iterations was conducted to test whether economic inequality’s effects on hostile attribution was mediated by perceived competition using the PROCESS macro (Model 4; Hayes, 2013) (see Figure 5A). We observed a significant indirect effect of perceived competition because the 95% confidence interval did not include zero (b indirect effect = 0.93, SE = 0.43, 95% CI [0.30, 2.02]). The direct effect was significant (b direct effect = 2.48, SE = 0.81, 95% CI [0.88, 4.08]). Furthermore, we found a significant indirect effect of inequality manipulation via perceived competition on behavioral intention (see Figure 5B) (indirect effect: b = 0.23.

Figure 5: Mediation Models of Experiment 3.

Note: Coefficients presented are unstandardized linear regression coefficients. The values inside parentheses indicates the total effects. Panel A: Indirect effect of economic inequality on hostile attribution via perceived competition. Panel B: Indirect effect of economic inequality on behavioral intention via perceived competition.

* p < 0.05. ** p < 0.01. *** p < 0.001.
Cheng, et al: Beware of the ‘Bad Guys’

(\(SE = 0.12\), 95% CI [0.05, 0.53]), and the direct effect was significant (direct effect: \(b = 0.90\) (0.30), 95% CI [0.31, 1.48]). Thus, statistical evidence showed that perceived competition could partly account for economic inequality’s effect on social vigilance.

Experiment 3’s results supported our main hypothesis and revealed that participants will less likely accept help from people living in countries with more unequal wealth distribution and will more likely anticipate that others have more hostile intentions when they interact, even if no obvious competitive relationship exists. Furthermore, perceived competition as a mediator is in line with Experiment 2’s findings. Specifically, participants perceived greater social competition in a highly unequal country, and as a result, they were more wary of others.

**General Discussion**

Three experiments were conducted to examine the hypothesis that economic inequality affected individuals’ social cognitive tendencies. We found that in an environment with high economic inequality, participants exhibited higher social vigilance. Experiment 1 revealed that participants anticipated that employees who worked in high-inequality settings were more likely to harm others’ interests. In Experiment 2, participants assumed that residents living in a society with greater inequality are more likely to behave unethically for their own benefit. Experiment 3 extended these findings in a noncompetitive situation. Participants tended to overattribute hostility to citizens living in a high-inequality country and reject their kindness even when no direct competitive cues existed. Furthermore, we found that the effect of economic inequality on social vigilance was caused by a stronger perception of social competition (Experiments 2–3).

**Implications**

Consistent with previous studies’ results, our research revealed that individuals attributed particular features to an environment with a specific level of inequality. Specifically, individuals perceive a stronger competitive normative climate in a highly unequal environment. These findings imply that the effect economic inequality on the perception of a competitive normative climate is robust across cultures.

More importantly, our work sheds light on economic inequality’s effect on social cognition. When perceiving greater social competition in a high-inequality context, individuals expect others to have more hostile motives. Although we used perceived competition as an explanatory mechanism, our findings are compatible with previous research about inequality and perceptions of the normative climate. For instance, individuals believed that people living in more unequal societies are more masculine, prioritize individual goals and endorse more self-enhancement values (Moreno-Bella et al., 2019; Sánchez-Rodríguez et al., 2019c; Sánchez-Rodríguez et al., 2020). These results also imply that individuals consider people in a high-inequality environment to be more threatening than those in a low-inequality environment.

Our results revealed a novel psychosocial factor that explains why economic inequality undermines social relations. An important consequence of greater inequality is that it increases social distance, resulting in less political and civic participation and reduced membership in social organizations (e.g., Buttrick & Oishi, 2017; Costa & Kahn, 2003; Wilkinson & Pickett, 2009). Social distance created by economic inequality even influenced individuals’ self-descriptive (Sánchez-Rodríguez et al., 2019b). Specifically, low economic inequality levels fostered interdependent self-construal. Some scholars considered that this is due to the fact that people are more antagonistic, less trusting, friendly and cooperative in a social environment where economic stratification is salient (e.g., de Vries et al., 2011; Pickett & Wilkinson, 2015; Uslaner & Brown, 2005; van de Werfhorst & Salverda, 2012; Wilkinson, 2005). Along similar lines, Loughnan et al. (2011) also found that citizens in economically unequal societies have a stronger self-enhancement bias. The current research provides another possible explanation: an increase in social distance is a result of individuals anticipating that people in a highly unequal environment are more likely to engage in unethical behaviors for their own interests or even against others’ interests. This hostile attribution could cause individuals to distance themselves from others or even refuse their friendly help.

Furthermore, this research’s findings suggest that individuals are aware that high economic inequality increases people’s hostile motives. Previous correlational studies found that economic inequality was positively associated with socially undesirable attitudes and behaviors, such as less agreeableness and more academic cheating at the state level (de Vries et al., 2011; Neville, 2012). The current research provides evidence that individuals tend to anticipate that citizens in a highly unequal society would act self-servingly and even threaten themselves. Therefore, to some extent, social vigilance may be an adaptive strategy in a highly unequal environment that contributes to protecting individuals’ interests.

**Limitation and Future Directions**

Although the current research revealed economic inequality’s general effect on social vigilance, we did not investigate economic inequality’s performance as a function of individuals’ social standing and its effect on social vigilance. Because people in a low social class have fewer resources and poorer living environments, low-SES individuals have higher threat vigilance and hostile attributions than their high-SES counterparts (Davis & Reyna, 2015; Kraus et al., 2011). It is possible that economic inequality exacerbates the discrepancy in social vigilance between upper- and lower-class individuals—that is, the effect may be stronger for low-SES individuals. However, another possibility is that because the poor earn lower incomes and have particularly bleak living conditions in high-inequality societies, upper-class individuals fear losing their advantaged statuses more (see ‘fear of failing’ effect; Jetten et al., 2017, 2020), which also causes them to exhibit greater social vigilance.
Moreover, although the subjective perception of inequality is a more important predictor of individual psychology processes, future studies could examine the relationship between objective economic inequality and social vigilance. A previous study found that countries with higher objective economic inequality are more collectivist (Basabe & Ros, 2005); however, participants assigned to the high-inequality condition showed less interdependent self-construal than those in the low-inequality condition (Sánchez-Rodríguez et al., 2019b). These inconsistent results imply that objective economic inequality and perceived inequality may have different influences on the same psychosocial process. Therefore, future studies could use a large sample from different regions with varying levels of economic inequality to test whether objective inequality has the same impact on social vigilance.

Future studies should further explore whether social vigilance caused by greater inequality affects individuals’ behavior. For example, when other people are anticipated to be more likely to behave unethically in a competitive situation, are individuals also more likely to behave unethically? Although a previous study found that economic inequality was linked with academic cheating (Neville, 2012), it is unclear whether individuals’ unethical behaviors are motivated by self-interest or by expecting others’ negative intentions. Thus, more experimental studies are required to clarify social vigilance’s role in the relationship between economic inequality and negative behaviors.

Future research could examine other possible explanations for the link between economic inequality and social vigilance. Previous studies about power found that compared with powerful individuals, powerless individuals in general show greater sensitivity to threats in the environment (e.g., Guinote, 2007; Keltner et al., 2003). For example, lower SES adults have lower levels of generalized trust (Brandt et al., 2014; Navarro-Carrillo et al., 2018). In this line, because high economic inequality causes people to perceive themselves as less wealthy, individuals in a high-inequality setting are more likely to display a typical powerless cognitive and behavioral pattern.

Finally, a weakness of this work is that social vigilance is measured exclusively through self-reported intention. Furthermore, it should be acknowledged that using only one question to measure a dependent variable (i.e., behavioral intention in Study 3) increases the measurement error (e.g., Spector, 1994). Future studies should adopt more realistic behavioral indicators to measure social vigilance.

Conclusion

Economic inequality, as a global trend, is a concern of social scientists. Recently, some studies have focused on the psychosocial effects of economic inequality, such as self-improvement bias and approach-avoidance motivation (Loughnan et al., 2011; Sommet et al., 2019). The current research provides evidence that economic inequality increases social vigilance. In a society with high inequality, individuals perceived more social competition, which evoked greater social vigilance. The findings explain how economic inequality influences individuals’ social cognition by shaping the normative climate.

Data Accessibility Statement

All study datasets are available at https://osf.io/9nkpm/?view_only=13fbe597948a4bd9558411a459397750.

Ethics and Consent

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Acknowledgements

We extend warm thanks to Prof. Rosa Rodríguez-Bailón and anonymous reviewers for their insights and detailed comments which helped us to substantially improve the paper. We would like to thank the support of the National Natural Science Foundation of China (Grant No. 31971012).

Competing Interests

The authors have no competing interests to declare.

References

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy white women. Health Psychology, 19(6), 586–592. DOI: https://doi.org/10.1037/0278-6133.19.6.586

Alesina, A., & La Ferrara, E. (2000). Participation in heterogeneous communities. The Quarterly Journal of Economics, 115(3), 847–904. DOI: https://doi.org/10.1162/003555000554935

Annandale, E., & Hunt, K. (1990). Masculinity, femininity and sex: An exploration of their relative contribution to explaining gender differences in health. Sociology of Health & Illness, 12(1), 24–46.

Basabe, N., & Ros, M. (2005). Cultural dimensions and social behavior correlates: Individualism-collectivism and power distance. Revue Internationale de Psychologie Sociale, 18(1), 189–225. DOI: https://doi.org/10.1.1.535.5185

Brandt, M. J., Wetherell, G., & Henry, P. J. (2014). Changes in income predict change in social trust: A longitudinal analysis. Political Psychology, 36(6), 761–768. DOI: https://doi.org/10.1111/pops.12228

Browniannuzzi, J. L., Lundberg, K. B., & Mckee, S. (2017). Political action in the age of high-economic inequality: A multilevel approach. Social Issues and Policy Review, 11(1), 232–273. DOI: https://doi.org/10.1111/sipr.12032

Buttrick, N. R., Heintzelman, S. J., & Oishi, S. (2017). Inequality and well-being. Current
Cheng, L., Zhou, X., Wang, F., & Hao, M. (2020). The greater the economic inequality, the later people have children: the association between economic inequality and reproductive timing. *Scandinavian Journal of Psychology, 61*(3), 450–459. DOI: https://doi.org/10.1080/14676435.2020.1808895

Chiu, C. Y., Gelfand, M. J., Yamagishi, T., Shteynberg, G., & Wan, C. (2010). Intersubjective culture: The role of intersubjective perceptions in cross-cultural research. *Perspectives on Psychological Science, 5*(4), 482–493. DOI: https://doi.org/10.1177/1745691610375562

Choe, J. (2008). Income inequality and crime in the United States. *Economics Letters, 101*(1), 31–33. DOI: https://doi.org/10.1016/j.econlet.2008.03.025

Costa, D. L., & Kahn, M. E. (2003). Understanding the American decline in social capital, 1952–1998. *Kyklos, 56*(1), 17–46. DOI: https://doi.org/10.1111/1467-6435.00208

Côté, S., House, J., & Willer, R. (2015). High economic inequality leads higher-income individuals to be less generous. *Proceedings of the National Academy of Sciences, 112*(52), 15838–15843. DOI: https://doi.org/10.1073/pnas.1511536112

Daviddai, S. (2018). Why do Americans believe in economic mobility? Economic inequality, external attributions of wealth and poverty, and the belief in economic mobility. *Journal of Experimental Social Psychology, 79*, 138–148. DOI: https://doi.org/10.1016/j.jesp.2018.07.012

Davis, J. R., & Reyna, C. (2015). Seeing red: How perceptions of social status and worth influence hostile attributions and endorsement of aggression. *British Journal of Social Psychology, 54*(4), 728–747. DOI: https://doi.org/10.1111/bjso.12109

de Vries, R., Gosling, S., & Potter, J. (2011). Income inequality and personality: Are less equal US states less agreeable? *Social Science & Medicine, 72*(12), 1978–1985. DOI: https://doi.org/10.1016/j.socscimed.2011.03.046

Elgar, F. J., & Aitken, N. (2011). Income inequality, trust and homicide in 33 countries. *European Journal of Public Health, 21*(2), 241–246. DOI: https://doi.org/10.1093/europcup/cqk068

Elgar, F. J., Craig, W., Boyce, W., Morgan, A., & Vella-Zarb, R. (2009). Income inequality and school bullying: multilevel study of adolescents in 37 countries. *Journal of Adolescent Health, 45*(4), 351–359. DOI: https://doi.org/10.1016/j.jadohealth.2009.04.004

Elgar, F. J., Pickett, K. E., Pickett, W., Craig, W., Molcho, M., Hurrelmann, K., & Lenzi, M. (2013). School bullying, homicide and income inequality: A cross-national pooled time series analysis. *International Journal of Public Health, 58*(2), 237–245. DOI: https://doi.org/10.1007/s00038-012-0380-y

Fairbrother, M., & Martin, I. W. (2013). Does inequality erode social trust? Results from multilevel models of US states and counties. *Social Science Research, 42*(2), 347–360. DOI: https://doi.org/10.1016/j.sssresearch.2012.09.008

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149–1160. DOI: https://doi.org/10.3758/BRM.41.4.1149

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*(2), 117–140. DOI: https://doi.org/10.1177/001872675400702002

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of stereotype content as often mixed: Separate dimensions of competence and warmth respectively follow from status and competition. *Journal of Personality and Social Psychology, 82*(6), 878–902. DOI: https://doi.org/10.1037/0022-3514.82.6.878

Guinote, A. (2007). Power affects basic cognition: Increased attentional inhibition and flexibility. *Journal of Experimental Social Psychology, 43*(5), 685–697. DOI: https://doi.org/10.1016/j.jesp.2006.06.008

Hauser, O. P., & Norton, M. I. (2017). (Mis)perceptions of inequality. *Current Opinion in Psychology, 18*, 21–25. DOI: https://doi.org/10.1016/j.copsyc.2017.07.024

Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York: The Guilford Press.

Heiserman, N., & Simpson, B. (2017). Higher inequality increases the gap in the perceived merit of the rich and poor. *Social Psychology Quarterly, 80*(3), 243–253. DOI: https://doi.org/10.1177/0190272517711919

Hsieh, C. C., & Pugh, M. D. (1993). Poverty, income inequality, and violent crime: A meta-analysis of recent aggregate data studies. *Criminal Justice Review, 18*(2), 182–202. DOI: https://doi.org/10.1177/07340689301800203

Islam, M. R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived out-group variability, and out-group attitude: An integrative model. *Personality and Social Psychology Bulletin, 19*(6), 700–710. DOI: https://doi.org/10.1177/0146167293196005

Jetten, J., Mols, F., Healy, N., & Spears, R. (2017). “Fear of falling”: Economic instability enhances collective angst among societies’ wealthy class. *Journal of Social Issues, 73*(1), 61–79. DOI: https://doi.org/10.1111/josi.12204

Jetten, J., Mols, F., & Steffens, N. K. (2020). Prosperous but fearful of falling: The wealth paradox, collective angst, and opposition to immigration. *Personality and Social Psychology Bulletin*. DOI: https://doi.org/10.1177/0146167219844112

Johnson, D. W., & Johnson, R. T. (1974). Instructional goal structure: Cooperative, competitive, or individualistic. *Review of Educational Research, 44*(4), 213–240. DOI: https://doi.org/10.3102/00346543044002213

Kawachi, I., & Kennedy, B. P. (1999). Income inequality and health: Pathways and mechanisms. *Health
in trust based on social class in Spain. Social Indicators Research, 139(2), 585–597. DOI: https://doi.org/10.1007/s11205-016-1527-7

Neville, L. (2012). Do economic equality and generalized trust inhibit academic dishonesty? Evidence from state-level search-engine queries. Psychological Science, 23(4), 339–345. DOI: https://doi.org/10.1177/095679761435980

Nishi, A., Shirado, H., Rand, D. G., & Christakis, N. A. (2015). Inequality and visibility of wealth in experimental social networks. Nature, 526(7573), 426–429. DOI: https://doi.org/10.1038/nature15392

Norton, M. I., & Ariely, D. (2011). Building a better America—One wealth quintile at a time. Perspectives on Psychological Science, 6(1), 9–12. DOI: https://doi.org/10.1177/1745691610393524

Payne, B. K., Brown-Iannuzzi, J. L., & Hannay, J. W. (2017). Economic inequality increases risk taking. Proceedings of the National Academy of Sciences, 114(18), 4643–4648. DOI: https://doi.org/10.1073/pnas.1614531114

Pickett, K. E., & Wilkinson, R. G. (2015). Income inequality and health: A causal review. Social Science & Medicine, 128, 316–326. DOI: https://doi.org/10.1016/j.socscimed.2014.12.031

Sánchez-Rodríguez, Á., Jetten, J., Willis, G. B., & Rodríguez-Bailón, R. (2019a). High economic inequality makes us feel less wealthy. International Review of Social Psychology, 32(1), 17, 1–11. DOI: https://doi.org/10.5334/irsp.333

Sánchez-Rodríguez, Á., Rodríguez-Bailón, R., & Willis, G. B. (2020). Economic inequality affects perceived normative values. Group Processes & Intergroup Relations. DOI: https://doi.org/10.1177/136840220968141

Sánchez-Rodríguez, Á., Willis, G. B., Jetten, J., & Rodríguez-Bailón, R. (2019c). Economic inequality enhances inferences that the normative climate is individualistic and competitive. European Journal of Social Psychology, 49(6), 1114–1127. DOI: https://doi.org/10.1002/ejsp.2557

Sánchez-Rodríguez, Á., Willis, G. B., & Rodríguez-Bailón, R. (2019b). Economic and social distance: Perceived income inequality negatively predicts an interdependent self-construal. International Journal of Psychology, 54(1), 117–125. DOI: https://doi.org/10.1002/jipo.12437

Sommet, N., Elliot, A. J., Jamieson, J. P., & Butera, F. (2019). Income inequality, perceived competitiveness, and approach-avoidance motivation. Journal of Personality, 87(4), 767–784. DOI: https://doi.org/10.1111/jopy.12432

Spector, P. E. (1994). Using self-report questionnaires in OB research: A comment on the use of a controversial method. Journal of Organizational Behavior, 15(5) 385–392. DOI: https://doi.org/10.1002/job.4030150503

Stephan, W. G., & Stephan, C. W. (2000). An integrated threat theory of prejudice. In S Oskamp (Ed.), Reducing Prejudice and Discrimination (pp. 23–45). Mahwah, NJ: Lawrence Erlbaum.
Uslaner, E. M., & Brown, M. (2005). Inequality, trust, and civic engagement. *American Politics Research, 33*(6), 868–894. DOI: https://doi.org/10.1177/1532673X04271903

van de Werfhorst, H. G., & Salverda, W. (2012). Consequences of economic inequality: Introduction to a special issue. *Research in Social Stratification and Mobility, 30*(4), 377–387. DOI: https://doi.org/10.1016/j.rssm.2012.08.001

Walasek, L., & Brown, G. D. A. (2015). Income inequality and status seeking: Searching for positional goods in unequal U.S. states. *Psychological Science, 26*(4), 527–533. DOI: https://doi.org/10.1177/0956797614567511

Walasek, L., & Brown, G. D. A. (2016). Income inequality, income, and internet searches for status goods: A cross-national study of the association between inequality and well-being. *Social Indicators Research, 129*(3), 1001–1014. DOI: https://doi.org/10.1007/s11205-015-1158-4

Weisgram, E. S., Dinella, L. M., & Fulcher, M. (2011). The role of masculinity/femininity, values, and occupational value affordances in shaping young men’s and women’s occupational choices. *Sex Roles, 65*(3–4), 243–258. DOI: https://doi.org/10.1007/s11199-011-9998-0

Wilkinson, R. G. (2005). *The Impact of Inequality: How to Make Sick Societies Healthier*. The New Press. DOI: https://doi.org/10.1111/j.1467-9566.2007.00492.x

Wilkinson, R. G., & Pickett, K. E. (2009). Income inequality and social dysfunction. *Annual Review of Sociology, 35*(1), 493–511. DOI: https://doi.org/10.1146/annurev-soc-070308-115926

Wilkinson, R. G., & Pickett, K. E. (2017). The enemy between us: The psychological and social costs of inequality. *European Journal of Social Psychology, 47*(1), 11–24. DOI: https://doi.org/10.1002/ejsp.2275

How to cite this article: Cheng, L., Hao, M., & Wang, F. (2021). Beware of the ‘Bad Guys’: Economic Inequality, Perceived Competition, and Social Vigilance. *International Review of Social Psychology, 34*(1): 9, 1–12. DOI: https://doi.org/10.5334/irsp.497

Submitted: 17 August 2020  Accepted: 24 March 2021 Published: 26 April 2021

Copyright: © 2021 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See http://creativecommons.org/licenses/by/4.0/.

*International Review of Social Psychology* is a peer-reviewed open access journal published by Ubiquity Press.