


RESEARCH ARTICLE

Double standards in the COVID-19 pandemic: The moderation of perceived threat

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Abstract

This research explored whether people hold double standards in a public crisis. We proposed that during the COVID-19 pandemic, people required others to strictly follow self-quarantine rules and other preventive behaviours, whereas they themselves would not, demonstrating double standards. Moreover, this effect would be moderated by the perceived threat from the pandemic. Using data collected in the United States and China, three studies ($N = 2180$) tested the hypotheses by measuring (Study 1) and manipulating the perceived threat (Studies 2 and 3). We found that people generally applied higher standards to others than to themselves when it came to following the self-quarantine rules. This effect was strong when a relatively low threat was perceived, but the self–other difference disappeared when the perceived threat was relatively high, as the demands they placed on themselves would increase as the perceived threat intensified, but their requirements of others would be constantly strict.

KEYWORDS

COVID-19, double standards, pandemic, quarantine, threat

1 | INTRODUCTION

Starting in December 2019, a new infectious virus (COVID-19) swept over the world and infected almost 176 million people (World Health Organization, 2021). Although vaccines have been developed to curb the spread of the virus, self-quarantine and other preventive behaviours are still necessary due to their effectiveness at breaking transmission chains and reducing infection rates (Patel et al., 2021). Self-quarantine refers to the separation of people who have been exposed to or infected by infectious diseases (Hellewell et al., 2020; Parmet & Sinha, 2020). Preventive behaviours refer to the behaviours that can minimize the risk of COVID-19, such as washing hands frequently, maintaining a social distance, and practising respiratory hygiene (Chan et al., 2021). It is estimated that self-quarantine rules have averted 44–96% of incident cases in the COVID-19 pandemic (Nussbaumer-Streit et al., 2020). The strong implementation of preventive behaviours also contributes to reducing the COVID-19 growth rate (Courtemanche et al., 2020; Zhang et al., 2020). Nevertheless, the

public may not follow these rules strictly (Webster et al., 2020). In the online surveys conducted in the United Kingdom, although 65% of the respondents reported the intention of quarantining, only 18% of those who had experienced symptoms actually self-quarantined (Smith et al., 2021).

Prior research attributed the public's failure with self-quarantining and other preventive behaviours to financial and logistical reasons (Smith et al., 2021). A few studies have begun to examine the psychological factors of compliance with preventive behaviours, such as psychological stress and anxiety (Kwok et al., 2020; Yang et al., 2020). Of these factors, a significant predictor is the perceived threat from the pandemic, which was found in both Western and Eastern samples (Vaccondio et al., 2021; Yang, Bin, & He, 2020; Yıldırım et al., 2021). The higher the threat perceived, the more likely people are to engage in preventive behaviours.

Nevertheless, no prior research focused on the prediction of the impact of the perceived threat from the pandemic on adherence to self-quarantine recommendations. In addition, these studies have focused

only on self-engagement in preventive behaviours (Vacondio et al., 2021; Yang et al., 2020; Yıldırım et al., 2021), neglecting the requirements placed on others. This 'other' perspective is important because it helps with understanding how governments and policymakers will establish policies and how people would respond to others' behaviours in social interactions.

In this research study, we focused not only on people's requirements for themselves to adhere to self-quarantining and other preventive behaviours but also on their requirements for others. We predicted that people may not follow the rule but rather impose strict requirements on others, demonstrating double standards. We further predicted that this discrepancy may depend on people's perceived threat from the pandemic—the double standards should be stronger when people perceive a lower threat. We elaborate the hypotheses in subsequent sections.

2 | DOUBLE STANDARDS AMID COVID-19

Having double standards refers to a situation in which people hold different requirements for others than they do for themselves, with the former often being stricter. It is a common phenomenon that has been observed in the domain of morality (Graham et al., 2015). For instance, people think of themselves as more acceptable than others are when they engage in the same misconduct (Polman & Ruttan, 2012; Valdesolo & DeSteno, 2008; Wang et al., 2021; Warach et al., 2019; Weiss et al., 2018). Similarly, people judge others more harshly than they judge themselves for the same sexually unfaithful behaviour (Warach, Josephs, & Gorman, 2019). Such a discrepancy extends to moral judgement in an in-group versus an out-group situation (Valdesolo & DeSteno, 2007).

The phenomenon of double standards is inherently a self-serving bias (Graham et al., 2015; Krebs & Laird, 1998; Valdesolo & DeSteno, 2008). People have a fundamental need to maintain a positive self-image (Mazar et al., 2008) and thus volitionally rationalize their own misconduct to preserve the semblance of being moral (Bandura, 1990; Tsang, 2002; Valdesolo & DeSteno, 2008), such as via attributing their moral violations to contextual factors that are out of their control (Choi & Nisbett, 1998; Jones & Nisbett, 1987), considering the good intentions behind their bad behaviour (Kruger & Gilovich, 2004), distorting the consequences of their immoral behaviour (Bandura, 1990), and forgetting moral rules (Shu et al., 2011). These different strategies free people from self-sanction and help them to maintain their positive self-images. Consistently, some psychological states (e.g., power, anger) that can grant individuals privileges and entitlement to justify their own moral misconduct increase the acceptance of their own moral violations (Lammers et al., 2010; Polman & Ruttan, 2012).

By contrast, people are less motivated to rationalize others' misbehaviours (Shu et al., 2011; Valdesolo & DeSteno, 2008) and tend to automatically condemn others without engaging in deliberate justification (Valdesolo & DeSteno, 2008). For example, people tend to make dispositional attributions (Meindl et al., 2016) and not to take intentions into account (Cushman et al., 2006; Kruger & Gilovich, 2004) while judging others. They are also less likely to demonstrate moral

disengagement—the process of employing different strategies to rationalize bad behaviours—when judging others' rather than their own misconduct (Shu et al., 2011). Taken together, people intentionally engage in more justifications when judging themselves than when judging others, thus demonstrating a double moral standard.

The current research was aimed at focusing on double standards in a public crisis (i.e., the COVID-19 outbreak). Specifically, we explored whether people would apply discrepant requirements to themselves and to others to follow public health practices as they make moral judgements. We were particularly interested in self-quarantining and preventive behaviours given their effectiveness at controlling the pandemic and the fact that the public always fails to adhere to these practices (Courtemanche et al., 2020; Hellewell et al., 2020; Webster et al., 2020; Zhang et al., 2020). Deciding whether to abide by these practices is a dilemma that people weigh between personal costs and public interests (Kluger, 2020). To take self-quarantining as an example, on the one hand, it incurs costs for the one in quarantine, such as inconvenience, opportunity time cost, financial cost, and psychological stress (Rubin & Wessely, 2020). On the other hand, it benefits the public, and the failure to self-quarantine receives condemnation and induces self-blaming emotions (e.g., guilt and shame). Such a dilemma also applies to other preventive behaviours (e.g., wearing masks, avoiding public places, and practising respiratory hygiene) because these behaviours can bring convenience and costs to the performer as well as benefit the public.

Extrapolating self-serving bias in the morality domain when it comes to our question, people take personal interests into account and may tolerate themselves not following self-quarantine rules and other preventive behaviours, whereas their requirements for others will be much stricter to promote public welfare. Consequently, people may demonstrate the double standards of applying higher self-quarantine requirements to others than to themselves.

3 | THE MODERATION OF PERCEIVED THREAT

Extending the above reasoning, we further proposed that the strength of such self-serving bias is contingent on the perceived threat that the COVID-19 pandemic has brought. As the pandemic becomes severe and people feel more threatened, the public benefits of implementing self-quarantining and preventive behaviours increase accordingly, and the personal costs of doing so remain constant. We thus predicted that people's requirements for themselves will intensify accordingly because such requirements result from weighing between public interests and personal costs. As a support, the prior literature has found a positive prediction of perceived threat on people's engagement in preventive behaviours (Vacondio et al., 2021; Yang et al., 2020; Yıldırım et al., 2021).

In contrast, people should require others to follow the rule strictly, regardless of how threatened they feel, because the motivation to maximize public interests drives the requirements placed on others. Taken together, people may impose more stringent requirements on others than they do on themselves when they perceive a relatively low threat, thus demonstrating double standards. By contrast, they apply high

requirements to both themselves and others while perceiving a high threat, thereby attenuating the double standards effect.

4 | THE CURRENT RESEARCH

We conducted three studies to test whether individuals apply lower standards to themselves than to others with regard to public health practices and whether the perceived threat moderates the effect. We merely focused on self-quarantine rules in Studies 1 and 2 and extended this to other preventive behaviours in Study 3. The data were collected in the United States (Studies 1 and 3) and in China (Study 2) during the COVID-19 outbreak to provide timely insights into how the pandemic has shaped thoughts. We measured (Study 1) and manipulated (Studies 2 and 3) perceived threat to test both correlational and causal relationships. Study 3 was preregistered at <https://aspredicted.org/ym3tr.pdf>.

We predetermined the sample sizes for all of the studies. Study 1 is correlational in nature. Given that estimating a correlation between two variables requires a total sample size of at least 250 participants (Schönbrodt & Perugini, 2013), we doubled the sample size and collected more than 500 participants because we had two predictors. After calculating the possible percentage of participants who failed to pass the attention check questions, we decided to open 540 slots. As for Study 2, we estimated the effect size (f^2) of the self–other interaction and the perceived threat to be 0.02. G*Power calculated that it required 528 participants to achieve a power of 0.90, given $\alpha = 0.05$. We decided to open 600 slots in case some participants failed to pass the attention check questions. We estimated the required sample size of Study 3 with the effect size obtained from Study 2 ($f^2 = 0.01$). G*Power calculated that it required 1,053 participants to achieve a power of 0.90, given $\alpha = 0.05$. We decided to open 1,100 slots in case some participants failed to pass the attention check questions.

5 | STUDY 1

In Study 1, we recruited American residents to examine whether individuals apply discrepant standards to themselves and to others with regard to self-quarantine rules and whether the perceived threat moderates the effect. We collected data from 2 August 2020 to 13 August 2020, which was the peak of the outbreak in the United States, and the accumulative confirmed cases increased from 4,671,745 to 5,251,365.¹

5.1 | Method

5.1.1 | Participants and design

We opened 540 slots on Amazon Mechanical Turk (MTurk) via TurkPrime (Litman et al., 2017), and 540 American residents submit-

ted their responses. Five people did not pass two attention check questions, leaving 535 valid participants (262 men; $M_{\text{age}} = 40.59$, $SD_{\text{age}} = 13.29$). Participants were randomly assigned to either the self or the other-people condition.

5.1.2 | Procedure and materials

Participants first completed the survey to collect their demographic information, in which we also imbedded three items to measure perceived threat: 'How severe do you think the outbreak is in the United States/the state where you live now/the city where you live now?' (1 = *Not at all* to 7 = *Very much*). The scores on the three items were averaged to indicate perceived threat ($\alpha = 0.78$).

Participants then read a scenario in which either they (the self condition) or a general person (the other-people condition) just returned from international travel and should self-quarantine at home according to the US Centers for Disease Control and Prevention (see Appendix A for the full scenario). We designed the scenario based on the rule that the Centers for Disease Control and Prevention released when we collected the data. The participants rated how they or the other person should self-quarantine (1 = *Not at all* to 7 = *Very much*).

5.2 | Results and discussion

We present the descriptive statistics and intercorrelations of all of the variables in Table 1 and the descriptive statistics of the dependent variables in the different conditions in Table 2. In both studies, we regressed the self-quarantine score on the standardized perceived threat, the effect code of the target condition (self = 1, other people = -1), and their interaction. Supporting our proposed double standards effect during the pandemic, we found a significant main effect of the target condition, $b = -0.22$, $SE = 0.05$, 95% CI = [-0.31, -0.12], $t(531) = -4.31$, $p < .001$, partial $\eta^2 = 0.03$. Thus, the participants thought other people should self-quarantine more than they should, demonstrating double standards. The main effect of the perceived threat was also significant, $b = 0.41$, $SE = 0.05$, 95% CI = [0.31, 0.51], $t(531) = 8.17$, $p < .001$, partial $\eta^2 = 0.11$. Therefore, individuals perceiving a high threat thought that quarantining is more necessary.

These main effects were further qualified by the significant interaction between the target condition and the perceived threat, $b = 0.29$, $SE = 0.05$, 95% CI = [0.19, 0.39], $t(531) = 5.80$, $p < .001$, partial $\eta^2 = 0.06$ (see Figure 1). Consistent with our hypothesis, when the perceived threat was relatively low (-1 SD), the participants thought other people should self-quarantine more than they should, $b = -0.51$, $SE = 0.07$, 95% CI = [-0.65, -0.37], $t(531) = -7.15$, $p < .001$. However, when the perceived threat was relatively high (+1 SD), the requirements imposed on the self and on others did not differ, $p = .291$. Put another way, the perceived threat positively predicted requirements for the self, $b = 0.70$, $SE = 0.07$, 95% CI = [0.56, 0.84], $t(531) = 9.81$, $p < .001$. However, it did not predict requirements for other people, $p = .093$.

¹ The data of the US was retrieved from <https://coronavirus.jhu.edu/data/cumulative-cases>. The data of mainland China was retrieved from <http://www.nhc.gov.cn/>.

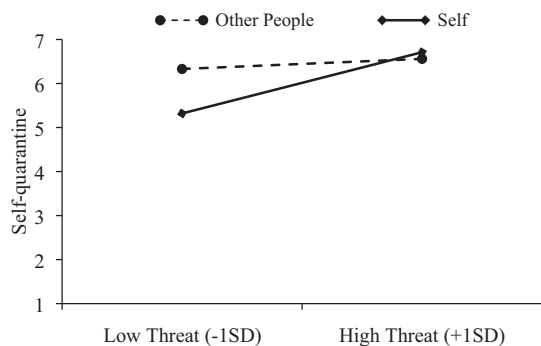
TABLE 1 Descriptive statistics and intercorrelations of all of the variables

		Mean (SD)	Intercorrelations		
			1	2	3
Study 1	1. Self-quarantine	6.22 (1.28)			
	2. Target conditions	0.01 (1.00)	-0.18***		
	3. Perceived threat	4.80 (1.25)	0.32***	-0.04	
Study 2	1. Self-quarantine	6.34 (1.18)			
	2. Target conditions	-0.03 (1.00)	-0.08		
	3. Threat conditions	0.01 (1.00)	0.09*	-0.01	
Study 3	1. Self-quarantine	5.72 (1.76)			
	2. Preventative behaviour	5.27 (1.07)	0.64***		
	3. Target conditions	-0.01 (1.00)	-0.07*	-0.12***	
	4. Threat conditions	0.01 (1.00)	0.06*	0.13***	-0.004

Note. Target conditions are coded as self = 1, other people = -1; threat conditions are coded as high = 1, low = -1. * $p < .05$, *** $p < .001$.

TABLE 2 Descriptive statistics of the dependent variables in each condition

Studies	Dependent variables	Threat condition	Other mean (SD)	Self mean (SD)
Study 1	Self-quarantine	—	6.45 (0.88)	5.99 (1.54)
Study 2	Self-quarantine	Low threat	6.44 (1.01)	6.01 (1.47)
		High threat	6.43 (1.10)	6.47 (1.05)
Study 3	Self-quarantine	Low threat	5.85 (1.71)	5.37 (1.93)
		High threat	5.82 (1.78)	5.84 (1.58)
	Preventive behaviours	Low threat	5.40 (1.03)	4.87 (1.15)
		High threat	5.41 (1.06)	5.40 (0.91)

**FIGURE 1** Self-quarantine as a function of perceived threat and target conditions

These findings demonstrated that people hold double standards in a public crisis. Moreover, the strength of this phenomenon depends on the perceived threat of the pandemic, and the double standards disappear when people perceive a relatively high threat.

6 | STUDY 2

The purpose of Study 2 was twofold. First, it involved recruiting participants from different cultural backgrounds (i.e., China) to test the

generalization of our findings. Second, it involved manipulating the perceived threat to establish causal evidence for the proposed effect. We collected data on 22 February 2020, for which the number of accumulative confirmed cases in mainland China was 51,606.

6.1 | Method

6.1.1 | Participants and design

We aimed to recruited 600 participants from various regions of China and finally received 602 responses. Forty-nine participants did not pass two attention check questions² and were removed from the data set, leaving 553 valid participants (197 men; $M_{age} = 24.86$, $SD_{age} = 5.81$). Participants were randomly assigned to one condition of a 2 (target: self vs. other people) \times 2 (threat level: high vs. low) between-subjects design.

² The two attention check questions used in Study 1 were: "Please choose six for this question" and "Please choose yes for this question." The two attention check questions used in Study 2, "Please choose three for this question" and "Please choose the first option for this question." The one attention check question used in Study 3: "Please choose four for this question."

6.1.2 | Procedure and materials

All original materials were in Chinese. The participants first completed the demographic information survey and then completed a reading comprehension task, which actually tended to manipulate their perceived threat. Those in the low-threat condition read a news article that claimed that policies to control the COVID-19 outbreak were effective and that the outbreak was improving and would fade soon. By contrast, those in the high-threat condition read a news article that claimed that although policies designed to control the COVID-19 outbreak were effective, there was a risk that the outbreak would flare up in the future. Both articles used existing statistics to support their arguments, and their lengths were equated (see Appendix B for the original and translated articles). Afterward, all participants answered the question, 'How severe do you think COVID-19 is now?' (1 = *Not severe at all* to 7 = *Very severe*), which was aimed at checking the manipulation effectiveness.

Participants then performed an imaginary task aimed at measuring their double standards. They read a scenario that either they (the self condition) or a general person (the other-people condition) who had just returned from an area that COVID-19 had hit hard should be in self-quarantine at home according to the rules of the community (see Appendix A for the full scenario). We designed the scenario based on the rule that the Chinese government released when we collected the data. The participants rated how necessary they felt the self-quarantine was (1 = *Not at all* to 7 = *Very necessary*). They were thanked and debriefed at the end.

6.2 | Results and discussion

Please see Table 1 for the descriptive statistics and intercorrelations of all the variables. Participants in the high-threat condition scored higher on the manipulation check question ($M = 5.51$, $SD = 1.16$) than those in the low-threat condition did ($M = 4.36$, $SD = 1.25$), $t(551) = 11.33$, $p < .001$, Cohen's $d = 0.96$, 95% CI of mean difference = [0.96, 1.36], suggesting a successful manipulation. Neither the target manipulation nor its interaction with the threat manipulation influenced the manipulation effect ($p_s > .183$).

Please see Table 2 for the descriptive statistics of self-quarantining in the different conditions. Using self-quarantining as the dependent variable, a 2×2 ANOVA test revealed a significant main effect of the target condition, $F(1, 549) = 3.94$, $p = .047$, partial $\eta^2 = 0.01$, which means that participants thought the quarantine was more necessary for others than it was for them, the manifestation of double standards. As in Study 1, the main effect of the threat level was also significant, $F(1, 549) = 5.31$, $p = .022$, partial $\eta^2 = 0.01$. Thus, the participants perceiving a high threat regarded quarantining as more necessary than those perceiving a low threat did.

Moreover, we found a significant interaction effect, $F(1, 549) = 5.71$, $p = .017$, partial $\eta^2 = 0.01$. The participants in the low-threat condition thought that quarantining was less necessary for them than it was for

others, $F(1, 549) = 9.48$, $p = .002$, partial $\eta^2 = 0.02$, 95% CI of mean difference = [-0.71, -0.16]. However, the participants in the high-threat condition did not show such a difference, $p = .777$. Put another way, a high perceived threat increased the requirements that people applied to themselves, $F(1, 549) = 10.69$, $p = .001$, partial $\eta^2 = 0.02$, 95% CI of mean difference = [0.19, 0.75], but it did not change the requirements placed on others, $p = .952$.

Extending Study 1, Study 2 demonstrates the presence of double standards during the pandemic and provides causal evidence that manipulating the perceived threat could moderate the revealed effect.

7 | STUDY 3

Study 3 was preregistered at <https://aspredicted.org/ym3tr.pdf>. In this study, we aimed to replicate the findings of Study 2 with a sample from the United States. To this end, we recruited American residents, manipulated their perceived threat, and measured their self-quarantine requirements. To extend our findings, we also measured their requirements regarding other preventive behaviours. We predicted that we would observe double standards not only for the self-quarantine rule but also for other preventive behaviours, and the manipulation of the perceived threat would moderate these relationships. We collected data from 13 October 2021 to 16 October 2021, for which the number of accumulative confirmed cases in the United States increased from 44,684,150 to 44,916,423.

7.1 | Method

7.1.1 | Participants and design

We opened 1,100 slots on Amazon Mechanical Turk (MTurk) via TurkPrime (Litman et al., 2017), and 1,110 American residents submitted their responses. Eighteen people did not pass one attention check question, leaving 1092 valid participants (398 men, three missing data; $M_{\text{age}} = 41.64$, $SD_{\text{age}} = 13.82$). They were randomly assigned to one condition of a 2 (target: self vs. other people) \times 2 (threat level: high vs. low) between-subjects design.

7.1.2 | Procedure and materials

Participants first reported their demographic information and then completed a reading comprehension task, which actually tended to manipulate their perceived threat. Those in the low-threat condition read a news article that claimed that the COVID-19 pandemic is in retreat, whereas those in the high-threat condition read a news article claiming that the COVID-19 pandemic is not over yet. Both articles used existing statistics to support their arguments. The lengths of the articles were equated (see Appendix C for the articles). Afterward, all

of the participants answered two questions: 'How severe do you think COVID-19 is now?' and 'How severe do you think COVID-19 will be in next few months?' (1 = *Not severe at all* to 7 = *Very severe*). We averaged the scores of the two questions to check the manipulation effectiveness ($r = 0.82$).

Similar to the prior study, the participants then performed an imaginary task aimed at measuring their double standards. They read a scenario that either they (the self condition) or a general person (the other-people condition) had not been fully vaccinated but had been in close contact with someone who had COVID-19. They or the general person should be in self-quarantine at home for 14 days according to the Centers for Disease Control and Prevention (see Appendix D for the full scenario). We designed the scenario based on the rule that the Centers for Disease Control and Prevention released when we collected the data. The participants rated how necessary/needed/essential they felt the self-quarantine was (1 = *Not at all* to 7 = *Very much*). We averaged the scores of the three items to create the requirement for self-quarantining ($\alpha = 0.98$).

The participants continued to finished a survey aimed at measuring their requirement for preventive behaviours. Specifically, they read 13 preventive behaviours adopted from the prior research (Ahorsu et al., 2020; Li et al., 2020; Yıldırım et al., 2021). They reported how necessary it was for them (the self condition) or other people (the other-people condition) to follow these behaviours (1 = *Not at all* to 7 = *Very necessary*). We averaged the scores of the 13 items to index the requirement for preventative behaviors ($\alpha = 0.87$). At the end of the study, the participants reported whether they had been fully vaccinated (1 = *yes*, 0 = *no*) and whether they had been infected by COVID-19 (1 = *yes*, 0 = *no*) to test whether the results would change after controlling for them. The participants finally were thanked and debriefed.

7.2 | Results and discussion

Please see Table 1 for the descriptive statistics and intercorrelations of all the variables. The participants in the high-threat condition scored higher on the manipulation check question ($M = 4.99$, $SD = 1.44$) than those in the low-threat condition did ($M = 3.62$, $SD = 1.47$), $t(1090) = 15.58$, $p < .001$, Cohen's $d = 0.94$, 95% CI of mean difference = [1.20, 1.54], suggesting a successful manipulation. Neither the target manipulation nor its interaction with the threat manipulation influenced the manipulation effect ($ps > .078$).

Please see Table 2 for the descriptive statistics of the dependent variables in the different conditions. We conducted two ANOVA tests with the requirement of self-quarantining and the requirement of preventive behaviours as the dependent variable, respectively. We found that the participants thought others should follow the requirements of self-quarantine and preventive behaviours more than they should, self-quarantine: $F(1, 1088) = 4.75$, $p = .030$, partial $\eta^2 = 0.004$; preventive behaviours: $F(1, 1088) = 17.75$, $p < .001$, partial $\eta^2 = 0.02$. In addition, those perceiving a high threat regarded self-quarantine requirements and preventive behaviours as more necessary than those perceiving

a low threat did, self-quarantine: $F(1, 1088) = 4.21$, $p = .040$, partial $\eta^2 = 0.004$; preventive behaviours: $F(1, 1088) = 18.06$, $p < .001$, partial $\eta^2 = 0.02$.

Moreover, we found significant interaction effects of the target condition and the severity condition on the self-quarantine requirements, $F(1, 1088) = 5.33$, $p = .021$, partial $\eta^2 = 0.01$, and on preventive behaviours, $F(1, 1088) = 17.08$, $p < .001$, partial $\eta^2 = 0.02$. The participants in the low-threat condition thought that others should follow these requirements more than they should, self-quarantine: $F(1, 1088) = 9.98$, $p = .002$, partial $\eta^2 = 0.01$, 95% CI of mean difference = [0.18, 0.77]; preventive behaviours: $F(1, 1088) = 34.52$, $p < .001$, partial $\eta^2 = 0.03$, 95% CI of mean difference = [0.35, 0.70]. However, the participants in the high-threat condition did not show such a difference, self-quarantine: $p = .926$; preventive behaviours: $p = .954$. Put another way, a high perceived threat increased the requirements that people applied to themselves, self-quarantine: $F(1, 1088) = 9.42$, $p = .002$, partial $\eta^2 = 0.01$, 95% CI of mean difference = [0.17, 0.76]; preventive behaviours: $F(1, 1088) = 34.81$, $p < .001$, partial $\eta^2 = 0.03$, 95% CI of mean difference = [0.35, 0.70]. In contrast, a high perceived threat did not change the requirements placed on others, self-quarantine: $p = .855$; preventive behaviours: $p = .934$.

The above results did not change after including participants' vaccination (1 = *yes*, 0 = *no*) and infection (1 = *yes*, 0 = *no*) as control variables. In addition, the participants who had been fully vaccinated thought it was more necessary to follow the requirements than who had not been fully vaccinated, self-quarantine: $F(1, 1085) = 125.22$, $p < .001$, partial $\eta^2 = 0.10$; preventive behaviours: $F(1, 1085) = 48.78$, $p < .001$, partial $\eta^2 = 0.04$. Meanwhile, participants who had been infected by COVID-19 thought it was less necessary to follow the requirements compared to those who had not been infected, self-quarantine: $F(1, 1085) = 11.03$, $p = .001$, partial $\eta^2 = 0.01$; preventive behaviours: $F(1, 1085) = 10.09$, $p = .002$, partial $\eta^2 = 0.01$.

Therefore, Study 3 replicated and extended the findings that people hold double standards for self-quarantine rules and other preventive behaviours. In addition, an increased perceived threat can eliminate these effects.

8 | META-ANALYSIS

Given the small effect sizes that we found in Studies 2 and 3, we conducted a single-paper meta-analysis based on these two studies to test (1) the interaction between the target condition and the threat level and (2) the simple effect of the target condition under a low perceived threat. We included only self-quarantine requirements as the dependent variable because requirements regarding preventive behaviours were measured only in Study 3. With the method that McShane and Böckenholt (2017) introduced, we estimated the interaction effect at 0.48 (95% CI: 0.20, 0.77) and the simple effect at -0.46 (95% CI: -0.67 , -0.24). See Appendix E for the plots of the effect estimates. The results suggested that when perceiving a low threat, people's requirements for themselves are lower than those placed on others.

9 | GENERAL DISCUSSION

A highly infectious and disruptive virus (COVID-19) swept the world in 2020. The death toll is climbing, and success at eliminating the virus is far from sight. Thus, preventive policies are crucial for curbing the spread of the disease (Nussbaumer-Streit et al., 2020). However, people may not follow these policies strictly or may demonstrate bias in doing so. The current research employed the self-quarantine rule to examine the double standards phenomenon in a public crisis. We consistently found that people think it is more necessary for others than for them to follow self-quarantine rules. Such an effect is strong when people perceive a low threat from the pandemic, and it disappears when they perceive a high threat because the requirements they impose on themselves increase. Notably, we collected data during the COVID-19 pandemic and included national samples from both Western and Eastern countries, which provided timely insights into people's thoughts during the pandemic and helped to overcome the possible influence of cultural differences.

The extant literature on double standards has mainly paid attention to the morality domain, in which people make judgements about behaviours that violate a set of obligatory virtues (e.g., Lammers et al., 2010; Polman & Ruttan, 2012; Valdesolo & DeSteno, 2008; Wang et al., 2021; Weiss et al., 2018). The current research focused on policy implementation in a public crisis and still found evidence of inconsistent standards for the self and others. We found that people generally hold strict requirements for themselves and other to implement self-quarantining and preventive behaviours given the related statistics are higher than the mid-point of the scale (see Table 1). This may be because of the high level of perceived threat participants reported (see Table 1). Nevertheless, we still found that people apply stricter requirements on others than on themselves. Although people differ in their perception that following such a policy is related to morality, undergoing a quarantine and engaging in other preventive behaviours incur costs to oneself, and breaking them earns public opprobrium and evokes feelings of guilt and shame (Kluger, 2020). Thus, our findings extend the scope of double standards and imply that such biases are likely to occur whenever a trade-off exists between personal costs and social norms.

Our research provides insights into the elimination of such double standards. First, it is important to educate the public about the risk of the pandemic. Our research demonstrates that the level of double standards depends on how threatened people feel, as their requirements for themselves become stricter as the threat increases. Thus, scientists and politicians should help the public to fully realize the virus's danger, especially when the public perceives a relatively low threat. Although the effect size for the moderation of the perceived threat is relatively small in statistics, this phenomenon deserves special attention because even a small group of people holding double standards in the pandemic can lead to detrimental effects.

In addition, we demonstrated the effect in both Western and Eastern samples. Many psychological studies have the "WEIRD" sampling bias, which refers to the disproportionate research focus on populations that are Western, educated, industrialized, rich, and democratic

(Cheon et al., 2020; Ghai, 2021; Henrich et al., 2010). This is also true in prior research on moral double standards. To help to remedy this oversight, the current research demonstrates pandemic-related double standards among American and Chinese participants, implying that the effect is not culture specific.

9.1 | Limitations and future research

The current research has several limitations that pave the way for future research. First, we found consistent findings that people apply double standards to self-quarantining and other preventive behaviours. A premise of the occurrence of double standards is that following these rules carries both benefits and costs. Thus, the level of double standards may vary in different types of preventive behaviours. People are more likely to demonstrate double standards when implementing protective behaviours that incur large costs but not when implementing behaviours with trivial costs. Further research can compare different protective behaviours to help to ensure policy implementation.

Second, we did not directly test the mechanism underlying the double standards, which may be accounted for by the different levels of justification and reasoning involved in self-versus-other decisions. Although people intuitively know that self-quarantining is correct, they may deliberately consider personal costs and create excuses for themselves to break the rule. A possible way of measuring this process is to ask participants to write down the thoughts they have while making a judgement (Ellis et al., 1997). People may have more rationalization thoughts (e.g., highlighting costs, considering situational factors, and blurring the rules) while making the decision for themselves than for others.

Third, our measure of double standards is another limitation. Across the studies, participants read hypothetical scenarios and reported how necessary a quarantine would be if they or a general other person were the protagonist. A possible approach with high ecological validity is to recruit participants who should self-quarantine but have not started yet—such as travellers returning from high-risk areas—and compare their plans with their requirements for others. Future researchers may wish to examine double standards in the public crisis with such methods.

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CONFLICT OF INTEREST

The authors declare that they have no competing interests.

ETHICS STATEMENT

This research received ethical approval from Institutional Review Board, School of Psychological and Cognitive Sciences, Peking University (#2020-02-18).

DATA AVAILABILITY STATEMENT

Data and analysis code can be found at https://osf.io/8ax94/?view_only=df9a7707d63a47d899aa62e3cd145e59

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APPENDIX A: THE SCENARIOS USED IN THE STUDIES

Study 1

Imagine that you [or a person in the other-people condition] just returned home from international travel. According to the Centers for Disease Control and Prevention, you [or this person] shall self-quarantine at home for 14 days due to the widespread, ongoing transmission of COVID-19 worldwide. You don't [or He/she doesn't] have any symptoms yet.

Study 2

Imagine that you [or a person in the other-people condition] have just returned home from an area that COVID-19 has hit hard. According to the requirements of your [or his/her] community, you [or he/she] need[s] to report to them and be quarantined at a designated place for 14 days. You don't [or He/she doesn't] have any symptoms yet.

Study 3

Imagine that you have [or a person has in the other-people condition] not been fully vaccinated but just been in close contact with someone who has COVID-19. According to the Centers for Disease Control and Prevention, you [or this person] shall be in self-quarantine at home for 14 days. You don't [or He/she doesn't] have any symptoms yet.

APPENDIX B: THE ARTICLES USED TO MANIPULATE PERCEIVED THREAT IN STUDY 2

High threat condition

Original article

新型冠状病毒传染性超强, 警惕疫情反弹

(440 字)

国家卫健委21日上午发布消息称, 2月20日全国新增确诊病例892例, 其中湖北以外地区新增病例为261例, 超过了19日50例的数据, 没能延续16天的连降势头

截至2月20日, 共有3个省5个监狱发生罪犯感染疫情。其中山东任城监狱2077人已确诊病例207例。而北京复兴医院、北大人民医院等多家医院也出现住院病人感染。而自2月10日起, 中国大部分省份开始逐步复工复产, 因复工带来的疫情传染案例也逐渐增加。例如2月10重庆钛业公司发生一起聚集性疫情严重事件, 造成131人被隔离。2月20日当当网确认员工及家属感染, 已有其他员工出现发烧症状。足见新型冠状病毒传染性之强

截止2月21日, 全国累计死亡2348例。一个个冰冷的数字背后, 曾经是一个个鲜活的生命。例如武昌医院原厂刘智明于2月18日去世, 湖北电影制片厂导演常凯一家四口染病去世, 父母几日便染病离世, 姐姐为医院护士, 于2月14日和常凯在同一天去世

2月21日中共中央政治局会议做出重大形势判断, 疫情拐点尚未到来! 专家也称, 我们还有很长的路要走, 未来一个月的疫情防控工作是最吃劲的关键阶段!

Translated article

Novel coronavirus is highly contagious, and we are on alert for a rebound of the epidemic

(440 words)

On 21 February, morning, The National Health Commission (NHC) announced that 892 new cases were reported nationwide on 20 February, including 261 outside Hubei province, surpassing the previous figure of 50 new cases reported on 19 February. Thus, China fails to extend the trend of continuously declining for 16 days.

As of 20 February, five prisons in three provinces had criminals who had been infected with the virus. Of the 2077 people in Rencheng Prison of Shandong province, 207 cases have been confirmed. The Beijing Fuxing Hospital, the People's Hospital of Peking University and other hospitals also reported inpatient infection. Since 10 February, most provinces in China have gradually resumed work and production, and the number of cases caused by the resumption of work has gradually increased. For example, on 10 February, a serious incident of cluster epidemic occurred in a Titanium Industry Company in Chongqing, resulting in 131 people being isolated. On 20 February, Dangdang, a famous online shopping company, confirmed that its employees and their family members were infected, and other employees had fever symptoms. These cases demonstrate the high contagion of the novel coronavirus.

As of 21 February, 2348 deaths had been reported nationwide. There was once a fresh life behind each cold number. For example, Liu Zhiming, the original manufacturer of Wuchang Hospital, died on 18 February. Chang Kai, the director of Hubei Film Studio, died of disease in his family of four. His parents died of disease in a few days, and his sister, a nurse in the hospital, died on 14 February on the same day as Chang Kai.

The meeting of the Political Bureau of the CPC Central Committee on 21 February made a critical judgement that the turning point of the epidemic has not yet arrived. Experts also said that we still have a long way to go, and the epidemic prevention and control work in next month is most important!

Low threat condition

Original article	Translated article
<p>好消息!新冠肺炎疫情防控效果已经显现,钟南山院士:再坚持几天</p>	<p>Good news! The effectiveness of preventing and controlling the COVID-19 starts to show. Academician Zhong Nanshan: Just need a few more days</p>
<p>(443 字) 根据《南方都市报》的报导,钟南山在远程会诊后,谈了他对目前新冠肺炎疫情的看法</p>	<p>(443 words) According to Southern Daily newspaper, Zhong Nanshan shared his views on the current COVID-19 epidemic after a remote consultation.</p>
<p>他表示,湖北以外全国新增确诊病例总数从2月3日开始已连降17天,而湖北的确诊病例也在持续下降,2月18日湖北地区的新增确诊病例为1693人,而2月19日这一数字就降到了349人。虽然20日非湖北地区的确诊病例数量有反弹,但是这主要是因为山东任城监狱爆发疫情,监狱以外地区的确诊病例仍在持续下降</p>	<p>He said the total number of new cases outside Hubei has dropped for 17 consecutive days since 3 February, while the number of confirmed cases in Hubei has also continued to decline, dropping from 1693 cases on 18 February to 349 cases on 19 February. Although the number of confirmed cases outside Hubei province rebounded on Monday, this was mainly due to the outbreak in Rencheng Prison in Shandong Province, and the number of confirmed cases outside the prison continued to decline.</p>
<p>钟南山表示从这些数字可以看出强有力的干预措施起了效果。就当下的形势来看,每天虽然还有新增的缓新型冠状病毒确诊的病例,大部分轻症患者已经出院,并且主要患者都是集中在武汉地区,非湖北地区已出现疫情减轻趋势</p>	<p>Zhong Nanshan says these figures show the effectiveness of the strong intervention measures. Given the current state, although there are still new confirmed cases of mild novel coronavirus every day, most of the mild cases have been discharged from hospital. In addition, the main cases are concentrated in Wuhan, and the epidemic is easing in non-Hubei areas.</p>
<p>另外他还提出,虽然疫情可能到三月份才会彻底结束,但是未来的一个月时间里,国家将严格执行各项措施,例如各个小区依然实行限行制,对各地疫情的通报保持高度透明。在国家政策的强大干预下,疫情将不太可能出现反弹。所以大众不需要过于担心。只需要在家中积极配合,定期测量自己的体温,定期观察自己的身体状况,如有异常,实现早发现,早隔离,早治疗</p>	<p>He also said that although the epidemic may end at March, the country will strictly implement various measures in the coming month, such as restricting traffic in all residential areas and maintaining a high degree of transparency in local notification of the epidemic. With strong intervention from national policies, the epidemic is unlikely to rebound. Therefore, the public need not worry too much and only need to stay at home, regularly measure the body temperature, and carefully observe the physical condition. We can detect, isolate, and receive treatment at an early stage if there is any abnormality.</p>

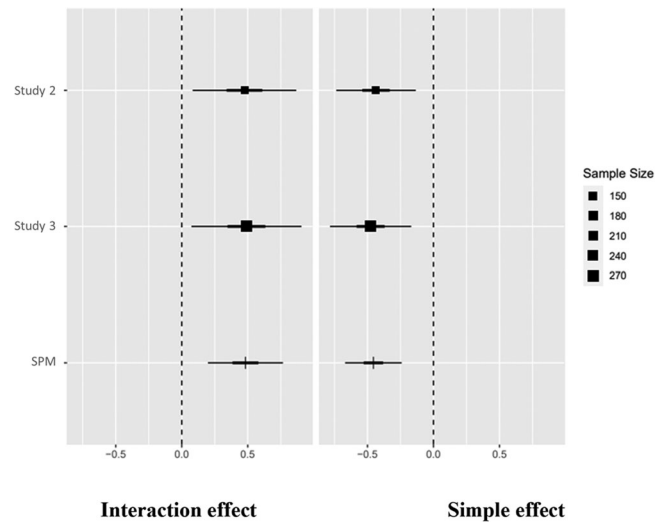
APPENDIX C: THE ARTICLES USED TO MANIPULATE PERCEIVED THREAT IN STUDY 3

High threat condition	Low threat condition
<p>Covid, not over yet (268 words)</p> <p>Covid-19 is once again in retreat. However, there is no guarantee that the decline in caseloads will continue. The number of US cases peaked around 166,000 on 1 September. In coming weeks and months, it is possible that the virus will surge again, maybe because of a new variant or because vaccine immunity will wane.</p> <p>The daily number of US fatalities is still “substantial and tragic”, said Dr Jeremy Faust, an emergency physician at Brigham and Women’s Hospital. Cases, deaths and hospitalizations are all currently higher than they were both one year ago and earlier in the summer before the delta variant took hold across the country.</p> <p>“I think right now, it looks like we’re in for a relatively tough fall with sustained transmission of Covid in our communities”, said Dr Barbara Taylor, an assistant dean and associate professor of infectious diseases at the University of Texas Health Science Center at San Antonio. She said the still-high infection rates mean the country is not yet out of the woods.</p> <p>The latest outbreak driven by the highly contagious delta variant has surged even as US officials vaccinated 216 million Americans with at least one dose over the last 10 months. Plunging temperatures through the fall and winter could further increase the risk as people start gathering in poorly ventilated areas where Covid can rapidly spread, experts say.</p> <p>How the pandemic in the US looks over the next few months will depend largely on how Americans behave heading into the holiday season. Covid also isn’t going to disappear anytime soon. It will continue to circulate for years, many scientists believe.</p>	<p>Covid, in Retreat (286 words)</p> <p>Covid-19 is once again in retreat. The turnaround is now large enough—and been going on long enough—to deserve attention. The number of new daily cases in the US has fallen 35% since 1 September. Worldwide, cases have also dropped more than 30% since late August. “This is as good as the world has looked in many months”, Dr Eric Topol of Scripps Research wrote last week.</p> <p>In the US, the Delta variant surge started in several Southern states in June and began receding in those states in August. In much of the rest of the US, it began in July, and cases have begun falling the past few weeks. Even paediatric cases are falling, despite the lack of vaccine authorization for children under 12.</p> <p>The most encouraging news is that serious Covid illnesses are also declining. The number of Americans hospitalized with Covid has fallen about 25% since 1 September. Daily deaths, which typically change direction a few weeks after cases and hospitalizations, have fallen 10% since 20 September. It is the first sustained decline in deaths since the early summer.</p> <p>The share of Americans 12 and over who have received at least one vaccine shot has reached 76%, and the growing number of vaccine mandates will increase the number of vaccinations this fall. The vaccines can transform Covid into a manageable disease, not so different from a flu or common cold.</p> <p>Eventually, immunity will become widespread enough that another wave as large and damaging as the Delta wave will not be possible. In the past few weeks, the country appears to have moved closer to that less grim future. The worst of the pandemic is almost certainly behind us.</p>

APPENDIX D: THE ITEMS OF PREVENTIVE BEHAVIOURS (STUDY 3)

1. Avoid public transportation
2. Avoid close contact with people who cough or sneeze
3. Washing hands frequently with soap and water or alcohol-based hand rub
4. Frequent washing groceries
5. Avoid eating or drinking outside
6. Keep a regular bedtime routine
7. Avoid public places
8. Having a healthy diet
9. Staying home if feeling unwell
10. Wear a facemask in public even if I am not sick
11. Cover nose and mouth with a disposable tissue or flexed elbow when coughing or sneezing
12. Keep safe social distance with others
13. Clean and disinfect frequently touched surfaces such as door-knobs, phones, and keyboards daily

APPENDIX E: EFFECT ESTIMATES OF THE SINGLE-PAPER META-ANALYSIS



Note. Effect estimates are given by the squares for single-study estimates and the vertical bars for single-paper meta-analysis estimate; 50% and 95% intervals are given by the thick and thin lines, respectively. The average sample size per condition in each study is given by the size of the squares.