Special Issue: COVID

Journal of Cross-Cultural Psychology
2021, Vol. 52(7) 606–621

DOI: 10.1177/00220221211995971
journals.sagepub.com/home/jcc
SAGE

Acceptance of Society-Level and Individual-Level Preventive Measures during the COVID-19 Pandemic among College Students in Three Societies

Nan Zhu[1], Judith G. Smetana[2], and Lei Chang[1]

Abstract

Drawing from social domain theory, this study examined people's evaluation of society-level disease-prevention regulations (e.g., school closure) and personal precautions (e.g., wearing a facemask) during the coronavirus (COVID-19) crisis, as assessed in Spring, 2020. Participants from three countries (United States [US], China, and Japan; $N = 528$) rated their acceptance of a range of society-level and individual-level preventive measures and then indicated their main reasons for these ratings, which were categorized as moral, societal, personal, and prudential based on social domain theory. Consistent with this theoretical framework, we found both similarities and differences across the three societies. Specifically, we found that, across the three societies, moral considerations predicted higher acceptance of society-level preventive measures, whereas personal considerations predicted lower acceptance of both society-level and individual-level preventive measures. However, a stronger link between societal considerations and higher acceptance of society-level preventive measures was found for Chinese participants than for US and Japanese participants.

Keywords

COVID-19, cross-cultural research, health behavior, public health, social domain theory

With limited treatment options and no vaccine yet available, the current battle against the COVID-19 pandemic relies mostly on societal-level disease-control efforts such as mobility control and contact tracing (Hale et al., 2020) and personal health precautions such as frequent handwashing and wearing facemasks (World Health Organization [WHO], 2020a). Researchers have identified an array of psychological factors that contribute to people's adherence to these preventive measures, including fear and perceived threats (Harper et al., 2020; Pakpour & Griffiths, 2020), risks and expectations (Lee & You, 2020; Wise et al., 2020), conspiracy beliefs (Imhoff & Lamberty, 2020), trust in science (Plohl & Musil, 2020), and political ideology

[1]University of Macau, Taipa, China
[2]University of Rochester, NY, USA

Corresponding Author:
Lei Chang, Department of Psychology, University of Macau, Humanities and Social Sciences Building E21-3045, Taipa 999078, Macau, China.
Email: chang@um.edu.mo

(Calvillo et al., 2020; Painter & Qiu, 2020). Recent research has also found considerable cross-society variations in individuals' acceptance of preventive measures (e.g., Clark et al., 2020). With very few exceptions (e.g., Lee & You, 2020), however, research regarding COVID-19 pandemic responses has been mostly conducted in Western societies. The global fight against the pandemic necessitates an understanding of people's attitudes toward these preventive measures in societies representing different cultural orientations and social structures. The current research, therefore, seeks to examine both cross-society commonalities and differences in individuals' COVID-19 responses.

One critical issue for the global fight against COVID-19 is intrasocietal conflicts (Turiel, 2002; Zhu et al., 2020) between collective interests (e.g., public health, social stability) and individual rights (e.g., privacy, freedom of movement) brought about by the preventive measures. Since the beginning of the pandemic, disease-control regulations have faced pushbacks from people throughout the world (e.g., protests over responses to the COVID-19 pandemic, n.d.). In the United States, dozens of anti-lockdown protests swept through half of the states in April, 2020 alone, forcing some governors to ease restrictions prematurely (Budryk, 2020). Acceptance of various protective measures can be conceptualized in terms of the different types of concerns they elicit, and from the perspective of social domain theory (Smetana et al., 2014; Turiel, 1983, 2006), these can be studied in terms of different developmental domains of social knowledge—for instance, concerns with others' welfare or harm to others (moral concerns) versus matters pertaining to personal choice. According to this view, controversies over the implementation of disease-control regulations can be seen as triggered by these competing—and sometimes irreconcilable—types of social knowledge. This is especially relevant for society-level interventions, which, in general, set greater limits on personal choices and freedoms than do personal health guidelines. Nevertheless, very few existing studies have examined preventive measures at both individual and society levels. Applying social domain theory to the area of public health, the present research aimed at examining reasons (considerations) associated with college students' acceptance of society-level and individual-level preventive measures that are commonly adopted across societies.

Research from social domain theory has shown cross-cultural similarities in the types of concerns evoked when individuals evaluate conflicts between collective interests and personal freedoms (Helwig, 1995, 1998; Smetana, 2011; Turiel, 2002). Four distinct categories of social issues have been identified by social domain theory (Smetana, et al., 2014; Turiel, 1983, 2006). *Moral* issues are concerned with universal moral principles of justice, fair treatment, and avoiding harm to others; these are seen as generalizable and not contingent on local rules or authorities. *Societal* issues concern issues of collective interests in terms of facilitating social order, societal functioning, and context-specific norms. *Personal* issues are concerned with privacy, personal choices, and preferences (Nucci, 1981). Finally, *prudential* issues are defined as actions affecting individuals' own comfort, health, and safety (but not those of others; Tisak & Turiel, 1984). All four types of concerns are relevant to people's attitudes toward society-level and individual-level preventive measures. Conformity to governmental regulations and personal precautions can be seen as moral obligations to protect the lives of vulnerable individuals and loved ones. From a societal perspective, society-level and individual-level preventive interventions might also prevent the collapse of the public health systems and maintain social order. However, individuals might oppose these measures on the grounds of constraints of personal choices and potential violations of privacy. From a prudential perspective, COVID-19 preventive measures might cause personal discomfort or inconvenience but, at the same time, keep individuals healthy and safe.

Another aim of the current study is to examine cross-cultural differences in individuals' evaluation of COVID-19 preventive measures, with a specific focus on three societies (the United States [US], China, and Japan). These three societies differ considerably in their cultural orientation toward collectivism versus individualism and in their vertical social structure (e.g., power

distance), and both figure prominently in individuals' evaluations of collective actions that restrict individual rights in intrasocietal conflicts (Zhu et al., 2020). Collectivism emphasizes the embeddedness of individuals in social networks and relationships, and the subordination of personal will to the collective welfare and common goals (Markus & Kitayama, 1991; Triandis et al., 1988). By contrast, individualism champions individual choice, personal freedom, and self-actualization (Inglehart, 1997; Oyserman et al., 2002). National-level aggregates of Hofstede's cultural dimensions showed that the US scores much higher in individualism than both China and Japan (IND scores for the US, China, and Japan = 91, 20, and 46, respectively; Basabe & Ros, 2005, pp. 223–226). In addition, the three societies also differ in vertical social structure, as revealed by Hofstede's power distance dimension (i.e., the propensity to expect and accept inequality in power; Basabe & Ros, 2005). China scored much higher in power distance than the US and Japan (PDI scores for the US, China, and Japan = 40, 80, and 54; Basabe & Ros, 2005, pp. 223–226).

Importantly, collectivism-individualism and power distance might work in tandem (or independently) in influencing people's considerations regarding collective actions (Zhu et al., 2020), including COVID-19 preventive measures. In functional terms, collectivism which emphasizes behavioral conformity and compliance with disease-avoiding social norms might keep individuals safe from infectious pathogens (Fincher & Thornhill, 2012; Schaller & Park, 2011; Wu & Chang, 2012). Consistent with this view, research has shown that participants from collectivistic societies (e.g., Japan and Singapore), compared with those from individualistic societies (e.g., the United Kingdom and the United States), demonstrated higher levels of conformity in Asch's line judgment task (Bond & Smith, 1996) and mock jury decisions (Tan et al., 1998). Additionally, one experiment found that Chinese students exhibited increased behavioral conformity when primed with pathogen threats (Wu & Chang, 2012). A survey conducted in the US after the 2014 Ebola scare also showed that collectivists who feel more vulnerable to infections indicated higher protection efficacy (Kim et al., 2016). Further, emerging evidence showed that collectivism is positively associated with psychological adjustment in the face of the COVID-19 pandemic and accompanying society-level restrictions among young adults (Germani et al., 2020). Overall, it is possible that people in collectivistic societies are more prepared for COVID-19 preventive measures because collectivism is more aligned with the societal concerns that underlie such measures.

This does not necessarily mean that collectivists always act in the interest of the collective. Past research has shown that, compared with individuals who are not collective-minded, collective-minded individuals contributed more to public goods when perceiving a clear cooperative norm but contributed less when there was no cooperative norm (Chen et al., 2007). This effect is likely to be more prominent in societies with a greater power distance, where people expect and rely on central authorities or authoritarian political systems to enforce social norms. A strong central authority might reduce norm inconsistency via biased social learning (i.e., learning from and conforming to the most prestigious leaders) and authoritarian enforcement of rules (e.g., Kessler & Cohrs, 2008). Such a vertical social structure might enhance disease prevention efforts, much as collectivism might, albeit at a societal level (Murray et al., 2013). This view is supported by cross-national covariation between pathogens and authoritarian personalities, and the link between pathogen prevalence and authoritarian governance among traditional societies (Murray et al., 2013). Conversely, in societies with lower respect for central authorities, individuals are more likely to rely on themselves to prevent diseases.

The above analyses led to a series of hypotheses regarding cross-society similarities and variations in people's evaluation of COVID-19 preventive measures. First, although individuals from all societies have the motivation to avoid disease infection, cultural and social-structural factors might predispose them toward different "behavioral immune systems" (Murray et al., 2013; Schaller & Park, 2011). Specifically, individuals from higher-power-distance societies (e.g.,

Table 1. Summary of Main Hypotheses and Findings.

Hypotheses	Findings
H1. China > US, Japan in society-level measures	Supported
H2. US > China, Japan in individual-level measures	Supported
H3. China > US, Japan in societal considerations for society-level measures	Partially supported: China > Japan; China ~= US in societal considerations for society-level measures
H4. US > China, Japan in personal considerations for society-level measures	Not supported: US < China < Japan in personal considerations for society-level measures
H5. Moral considerations → Higher support for society-level measures	Supported
H6. Personal considerations → Lower support for society-level and individual-level measures	Supported
H7. Societal considerations → Higher support for society-level measures especially in the Chinese sample	Supported

China) should be more ready to support society-level disease-control measures than individuals from lower-power-distance societies (H1), whereas people in individualistic societies (e.g., the US) should be more willing to enact individual-level disease-control measures than those in more collective societies (H2). From the perspective of social domain theory, intrasocietal conflicts between collective and individual interests are common across societies, reflected by conflicting considerations regarding the same issues within each society (Turiel, 2002, 2006). It is possible, however, that different societies place differential emphasis on various domains, especially regarding intrasocietal conflicts between personal choice and societal welfare (Zhu et al., 2020). Specifically, we hypothesized that, when evaluating society-level measures, Chinese participants would endorse more societal considerations than would US and Japanese participants (H3), whereas US participants would endorse more personal considerations than would Chinese and Japanese participants (H4).

In terms of how different types of concerns might predict people's acceptance of preventive measures, we hypothesized that moral considerations, which emphasize universal principles of justice, fairness, and avoidance of harm to others (Turiel, 1983, 2006), should be associated with higher acceptance of society-level measures that protect others' welfare in all three societies (H5). By contrast, personal considerations, which emphasize privacy and personal choice, should be associated with lower acceptance of society-level and individual-level measures in these societies, as both types of measures restrict personal choice (H6). The link between individuals' societal considerations and their higher support for society-level preventive measures should be especially prominent in the Chinese society (H7), which is both collectivistic and accustomed to high power distance (Basabe & Ros, 2005; Hofstede & Bond, 1988). These hypotheses are summarized in Table 1.

Beyond the social domain-relevant concerns, we also examined—and controlled for—the effects of other factors that might affect individuals' evaluation of COVID-19 preventive measures. Participants completed scales measuring perceived vulnerability to disease (Duncan et al., 2009) and sense of control (Lachman & Weaver, 1998). They were also asked to identify governmental regulations already implemented by the government of their home country; this indicates the preparedness of their society. Finally, we assessed participants' subjective evaluation of the controllability of the pandemic (through society-level regulations) and the preventability of COVID-19 (through personal precautions). These measures might be relevant to participants' endorsement of preventive measures in different ways. For example, a study conducted during

the early weeks of the COVID-19 outbreak in the US found a strong link between individuals' engagement in social distancing and handwashing, and perceived risks of infection (Wise et al., 2020). Individuals were also more likely to support preventive measures when they believe the infection risks can be controlled and prevented (Clark et al., 2020). Therefore, perceived vulnerability to disease and subjective beliefs that COVID-19 is preventable and controllable are likely to be associated with higher acceptance of society-level and individual-level preventive measures. Individuals with a higher sense of control were expected to show higher acceptance of individual-level preventive measures, and the number of existing governmental regulations reported by the participants should also predict higher acceptance of society-level preventive measures.

Method

Participants

We recruited 545 college students from the United States (US), China, and Japan, who completed an online questionnaire from April 21 to May 31, 2020. After excluding 17 international students who did not reside in the country during the period of the research, the sample sizes were 122, 215, and 191, including 82, 167, and 111 females in the US, Chinese, and Japanese samples, respectively. US participants, aged 18 to 25 years ($M = 20.26$, $SD = 1.36$), were recruited from students taking psychology courses in multiple universities in the Northeastern US. The racial makeup of the sample was 54.4% White, 8.8% Black or African American, 0.8% American Indian or Alaska Native, 28.8% Asian, 0.8% Native Hawaiian or Pacific Islander, and 6.4% other. Chinese participants, aged 18 to 34 years ($M = 21.37$, $SD = 3.45$), and Japanese participants, aged 18 to 27 years ($M = 20.26$, $SD = 1.26$) were likewise recruited from universities of similar renown in Eastern China and Central Japan. All local participants in the Chinese (Japanese) sample identified themselves as Chinese (Japanese) during recruitment. A sensitivity power analysis using G*Power 3.1 (Faul et al., 2007) revealed that using the current sample size, the minimal effect size can be detected (two-tailed $\alpha \leq .05$, statistical power $\geq .80$) for the cross-society differences is $f = .11$.

Preventive Measure Evaluation

Participants rated the acceptability of a range of possible society-level preventive measures to prevent COVID-19 from 1 (*very unacceptable*) to 6 (*very acceptable*). These measures included: (a) closing of national borders, (b) shutting down non-essential businesses, (c) police-enforced social distancing (e.g., shelter-in-place, banning gatherings), (d) compulsory disclosing of health and medical condition, (e) using technologies to trace citizens' movement, and (f) enforced quarantine. Participants also rated the acceptability of a range of individual-level preventive measures: (a) wearing facemasks, (b) handwashing, (c) wearing gloves when shopping, (d) avoiding crowds, (e) voluntary self-disclosure of traveling history, and (f) voluntary self-isolation when feeling sick or being tested for COVID-19. For both society-level and individual-level preventive measures, we averaged the ratings of the six items to represent participants' overall evaluation of their acceptability. Cronbach's αs for the acceptability ratings within the US, Chinese, and Japanese samples were .81, .81, and .75, respectively, for society-level preventive measures, and .87, .77, and .67, respectively, for individual-level preventive measures.

Next, participants were given a list of 12 considerations and asked to select 3 main concerns influencing their evaluations of society-level preventive measures and likewise, 3 main considerations influencing their evaluations of individual-level preventive measures. These considerations, listed in Table 2, were categorized into moral, societal, personal, and prudential

Table 2. Frequencies and Percentages of Participants Selecting Different Considerations When Evaluating Society-Level and Individual-Level Preventive Measures across the Three Samples.

		US	China	Japan
Considerations	Domain	Selected (%)	Selected (%)	Selected (%)
Society-level measures considerations				
Protecting the welfare of vulnerable individuals	Moral	86 (70.49)	72 (33.49)	69 (36.13)
Reducing the risk of infecting loved ones	Moral	57 (46.72)	85 (39.53)	23 (12.04)
Preventing unfair economic outcomes for disadvantaged individuals	Moral	47 (38.52)	23 (10.70)	88 (46.07)
Avoiding social chaos and societal collapse	Societal	36 (29.51)	130 (60.47)	39 (20.42)
Ensuring governmental systems' functioning to avoid a shortage of medical resources	Societal	55 (45.08)	51 (23.72)	47 (24.61)
Reducing the long-term, negative impact on the country's economy	Societal	33 (27.05)	40 (18.60)	63 (32.98)
Protecting privacy	Personal	10 (8.20)	40 (18.60)	26 (13.61)
Avoiding serious limitations on lifestyle choices	Personal	1 (0.82)	22 (10.23)	41 (21.47)
Protecting personal choice and freedom	Personal	6 (4.92)	24 (11.16)	102 (53.40)
Reducing personal risk of infection	Prudential	33 (27.05)	134 (62.33)	4 (2.09)
Avoiding physical or social discomfort	Prudential	1 (0.82)	2 (0.93)	20 (10.47)
Avoiding major inconvenience in daily life	Prudential	1 (0.82)	22 (10.23)	4 (2.09)
Individual-level measures considerations				
Protecting the welfare of vulnerable individuals	Moral	73 (59.84)	73 (33.95)	69 (36.13)
Reducing the risk of infecting loved ones	Moral	84 (68.85)	107 (49.77)	91 (47.64)
Preventing unfair economic outcomes for disadvantaged individuals	Moral	22 (18.03)	12 (5.58)	10 (5.24)
Avoiding social chaos and societal collapse	Societal	21 (17.21)	100 (46.51)	87 (45.55)
Ensuring governmental systems' functioning to avoid a shortage of medical resources	Societal	38 (31.15)	42 (19.53)	32 (16.75)
Reducing the long-term, negative impact on the country's economy	Societal	29 (23.77)	30 (13.95)	23 (12.04)
Protecting privacy	Personal	8 (6.56)	13 (6.05)	20 (10.47)

(continued)

Table 2. (continued)

Considerations	Domain	US Selected (%)	China Selected (%)	Japan Selected (%)
Avoiding serious limitations on lifestyle choices	Personal	5 (4.10)	21 (9.77)	22 (11.52)
Protecting personal choice and freedom	Personal	5 (4.10)	26 (12.09)	17 (8.90)
Reducing personal risk of infection	Prudential	70 (57.38)	176 (81.86)	167 (87.43)
Avoiding physical or social discomfort	Prudential	7 (5.74)	12 (5.58)	5 (2.62)
Avoiding major inconvenience in daily life	Prudential	4 (3.28)	33 (15.35)	30 (15.71)

Note. Valid *ns* = 122, 215, and 191 for the US, Chinese, and Japanese samples, respectively.

concerns (comprising three considerations each) based on social domain theory by a separate group of pilot participants (see Supplemental Material for details of the development of the considerations).

Other Measures

Perceived vulnerability to disease. A general estimate of one's vulnerability to disease was measured by the Perceived Vulnerability to Disease Questionnaire (PVD; Duncan et al., 2009). The questionnaire consists of 15 items (e.g., "It really bothers me when people sneeze without covering their mouths," "If an illness is 'going around', I will get it"). The 15 items were aggregated into a PVD index. The Cronbach's αs for these items were .81, .72, and .80 for the US, Chinese, and Japanese samples, respectively.

Sense of control. Sense of control was measured using an established measure from Lachman and Weaver (1998). Participants rated their agreement with four statements (e.g., "I can do just about anything that I really set my mind to," "whatever happens in the future mostly depends on me"), ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). These four items were aggregated into a measure of sense of control. Cronbach's αs for these items were .79, .83, and .74 for the US, Chinese, and Japanese samples, respectively.

Governmental regulations. Participants indicated whether their home country had enacted a list of non-pharmaceutical interventions to combat the COVID-19 threat (e.g., closing national borders, police-enforced social distancing). The number of governmental regulations indicated by the participants served to represent perceived seriousness in COVID-19 responses in their societies.

Subjective evaluations of COVID-19 threats. To assess participants' subjective evaluations of the COVID-19 crisis, we asked participants to rate, "How controllable do you think the spread of the COVID-19 is at the societal level" from 1 (*totally controllable*) to 7 (*totally uncontrollable*). We also asked them to rate, "How preventable do you think the COVID-19 infection is for you personally" from 1 (*totally preventable*) to 7 (*totally unpreventable*).

Participants also responded to two questions regarding their personal exposure to COVID-19, and the spread of COVID-19. Only one participant in the Chinese sample reported being infected by COVID-19. However, most participants in the three societies knew of COVID-19 cases in

their city/town, community, or among their family and friends (see Supplemental Material for more details regarding these two questions).

Results

Data, SPSS syntax, and the full list of measures for this study are available at Mendeley Data (http://dx.doi.org/10.17632/x3hvchhf2y.2). We first compared the means of other measures (i.e., perceived vulnerability to diseases, sense of control, governmental regulations, and subjective controllability and preventability of COVID-19) across the three samples (detailed in the Supplemental Material). We found no significant cross-society difference in perceived vulnerability to diseases, but there were differences across societies in the other measures. US participants indicated that they felt a greater sense of control than did Chinese and Japanese participants, but the latter two groups did not differ from each other. Chinese participants, on average, reported more governmental regulations than did US participants, and in turn, Japanese participants. Compared with Japanese participants, both US and Chinese participants rated the pandemic as more controllable, and the disease as more preventable. Chinese participants, in turn, perceived higher controllability and preventability than did US participants.

Acceptability Ratings

The average acceptability ratings of individual preventive measures for the three samples are reported in Supplemental Material. The following analyses focused on the overall acceptability ratings of society-level and individual-level preventive measures. We first conducted a three (society: US, China, Japan) × two (type of preventive measures: society, personal) mixed analysis of variance (ANOVA) on the acceptability ratings. We found significant main effects of society, $F(2, 525) = 19.93$, $p < .001$, $\eta_p^2 = .07$, Cohen's $f = 0.27$, and type of preventive measure, $F(1, 525) = 772.62$, $p < .001$, $\eta_p^2 = .60$, Cohen's $f = 1.71$, which were qualified by a significant society X type of preventive measure interaction, $F(2, 525) = 14.98$, $p < .001$, $\eta_p^2 = .05$, Cohen's $f = 0.23$. We probed this interaction using separate one-way ANOVAs on acceptability ratings of societal and individual-level measures (Table 3). Both ANOVAs revealed significant cross-society differences, Fs = 21.30, 11.99, ps < .001, $\eta_p^2 = .08$, .04, Cohen's fs = 0.28, 0.20, respectively. Chinese participants rated society-level preventive measures as more acceptable than did US and Japanese participants, ps < .01, CI95s [0.11, 0.55], [0.32, 0.72], but US and Japanese ratings did not differ, $p = .123$, CI95 [−0.03, 0.42]. Both US and Chinese participants rated individual-level preventive measures as more acceptable than did Japanese participants, ps < .01, CI95s [0.14, 0.44], [0.07, 0.33], but US and Chinese ratings did not differ, $p = .420$, CI95 [−0.06, 0.24].

Considerations for COVID-19 Preventive Measures

Table 2 presents the numbers and percentages of participants in the three samples that selected different considerations. US participants prioritized moral and societal considerations (selected by 52% and 34% of the participants on average, respectively) over personal and prudential considerations (selected by 5% and 10% of the participants, respectively). In the Chinese sample, the most frequently selected considerations among the four categories were societal considerations (34%), followed by moral (28%) and prudential (25%) considerations. Personal considerations (13%) were selected the least. Finally, moral, personal, and societal issues were the main considerations for 31%, 29%, and 26%, respectively, of Japanese participants' evaluations of COVID-19 preventive measures, whereas prudential considerations were only selected by 5% of the Japanese sample.

Table 3. Means (M) and Standard Deviations (SD) of The Dependent Measures Across The Three Societies.

Variables	US, *M* (*SD*)	China, *M* (*SD*)	Japan, *M* (*SD*)	Differences across societies, *F*
Acceptability of society-level measures	4.34 (0.86)[b]	4.68 (0.77)[a]	4.18 (0.82)[b]	21.30***
Acceptability of individual-level measures	5.46 (0.58)[a]	5.38 (0.53)[a]	5.18 (0.54)[b]	11.99***
Society-level measures considerations				
Moral consideration	1.55 (0.76)[a]	0.84 (0.69)[b]	0.94 (0.67)[b]	44.46***
Societal consideration	1.02 (0.77)[a]	1.03 (0.74)[a]	0.78 (0.63)[b]	7.25***
Personal consideration	0.14 (0.37)[c]	0.40 (0.59)[b]	0.88 (0.65)[a]	70.61***
Prudential consideration	0.29 (0.47)[b]	0.73 (0.55)[a]	0.15 (0.38)[b]	82.08***
Individual-level measures considerations				
Moral consideration	1.47 (0.73)[a]	0.89 (0.68)[b]	0.89 (0.74)[b]	30.72***
Societal consideration	0.72 (0.71)[a]	0.80 (0.72)[a]	0.74 (0.70)[a]	0.58
Personal consideration	0.15 (0.38)[a]	0.28 (0.54)[a]	0.31 (0.58)[a]	3.80
Prudential consideration	0.66 (0.60)[b]	1.03 (0.54)[a]	1.06 (0.53)[a]	22.21***

Note. Valid *ns* = 122, 215, and 191 for the US, Chinese, and Japanese samples, respectively. For each row, means sharing the same superscripts were not significantly different from each other according to Bonferroni post-hoc comparisons.
*$p < .001$.

We conducted separate one-way ANOVAs on the number of moral, societal, personal, and prudential considerations (see Table 3 for descriptive statistics of the average number of these considerations for society- and individual-level preventive measures selected by participants from three societies). Given that there are eight alternative considerations simultaneously probed, alpha levels were Bonferroni-corrected ($p < .00625$) in these analyses; only significant effects are reported below. We found significant cross-society differences in the endorsement of moral and prudential considerations for both society-level and individual-level measures. For societal and personal considerations, however, there were only significant cross-society differences when they were applied to society-level measures (Table 3).

Specifically, for both society-level and individual-level measures, US participants selected more moral considerations than did Chinese participants ($ps < .001$, CI95s [0.47, 0.97], [0.32, 0.83]) and Japanese participants ($ps < .001$, CI95s [0.36, 0.87], [0.31, 0.84]). Chinese participants selected more societal considerations for society-level preventive measures than did Japanese participants ($p = .002$, CI95 [0.02, 0.47]). Japanese participants selected more personal considerations for society-level measures than did US and Chinese participants ($ps < .001$, CI95s [0.53, 0.96], [0.30, 0.67]), and Chinese participants selected more personal considerations than did US participants ($p = .001$, CI95 [0.05, 0.47]). Chinese participants selected more prudential considerations for society-level preventive measures than did US and Japanese participants ($ps < .001$, CI95s [0.27, 0.62], [0.44, 0.74]). Chinese and Japanese participants selected more prudential considerations for individual-level preventive measures than did US participants ($ps < .001$, CI95s [0.16, 0.56], [0.19, 0.60]).

Predicting the Acceptability of Preventive Measures

We conducted a series of multi-step linear regressions with the acceptability ratings of society-level and individual-level preventive measures as dependent variables (see Supplemental

Material, Tables S3 and S4 for detailed results). In the first step, we entered the societies (using two dummy codes to represent the three samples, with the Japanese sample as a reference), perceived vulnerability to disease, sense of control, governmental regulations, and subjective evaluations of controllability and preventability as predictors. These predictors accounted for 15% of the variance in the acceptability of society-level measures, $F(7, 507) = 13.06$, $p < .001$, and 13% of the variance in the acceptability of individual-level measures, $F(7, 507) = 10.57$, $p < .001$. Specifically, perceived vulnerability to disease and subjective preventability were associated with higher acceptability of society-level preventive measures (βs = .13, .17, ps = .002, .002, respectively) and with higher acceptability of individual-level preventive measures (βs = .25, .15, ps < .01, respectively). Governmental regulations were only related to higher acceptability of society-level measures ($\beta = .22$, $p = .001$), whereas sense of control was only related to higher acceptability of individual-level measures ($\beta = .11$, $p = .012$). Moreover, after controlling for these variables, US participants perceived individual-level measures as more acceptable than did Japanese participants ($\beta = .16$, $p = .005$).

In the second step, we tested four different models for the acceptability of both societal and individual-level measures, respectively. Each alternative model included a different category of consideration and its interaction terms with the US and Chinese samples as predictors. Bonferroni correction of alpha levels ($p < .0125$) was applied, given the four alternative models being tested.

Moral considerations. Step two of the moral-consideration model accounted for an additional 3% of variance in acceptability of society-level measures, $F(3, 504) = 6.18$, $p < .001$, and an additional 3% of variance in acceptability of individual-level measures, $F(3, 504) = 5.17$, $p = .002$. Specifically, moral considerations were associated with higher acceptability of society-level measures ($\beta = .29$, $p < .001$). However, moral considerations and their interactions with the US and Chinese samples were not significantly associated with the acceptability of individual-level preventive measures (βs < .13, ps > .0125).

Societal considerations. Step two of the societal-consideration model accounted for an additional 2% of variance in acceptability of society-level measures, $F(3, 504) = 3.86$, $p = .009$, but did not account for significant variance in acceptability of individual-level measures, $F(3, 504) = 3.09$, $p > .0125$. Societal considerations interacted significantly with society, indicating that societal considerations more strongly predicted higher acceptability of society-level preventive measures in the Chinese sample than in the Japanese sample ($\beta = .28$, $p = .004$).

Personal considerations. Step two of the personal-consideration model accounted for an additional 9% of variance in acceptability of society-level preventive measures, $F(3, 504) = 19.17$, $p < .001$, and an additional 5% of variance in acceptability of individual-level preventive measures, $F(3, 504) = 10.82$, $p < .001$. Specifically, personal considerations were associated with lower acceptability of both societal and individual-level measures (βs = −.18, −.30, ps < .0125, respectively). Moreover, a significant personal consideration X society interaction indicated that personal considerations were more strongly associated with lower acceptability of society-level preventive measures in the Chinese sample than in the Japanese sample ($\beta = -.17$, $p = .005$).

Prudential considerations. The prudential-consideration step-two models did not account for significant variance in acceptability of societal or individual-level measures, ΔFs < 2, ps > .10.

Discussion

The findings of this study supported some common speculations regarding cross-cultural differences in public support for preventive measures but also some differences (discussed below).

Overall, both society-level and individual-level preventive measures were generally endorsed by participants from all three societies, as indicated by average ratings of 4 or higher on 6-point scales. This is compatible with the behavioral immune system theory (Murray et al., 2013; Schaller & Park, 2011), which argues that individuals from all societies enact a suite of behavioral, cognitive, and emotional actions in response to disease-infection threats. As expected (H1), Chinese participants indicated the highest acceptance of society-level preventive measures (e.g., police-enforced social distancing and enforced quarantine), but not individual-level preventive measures (e.g., wearing gloves when shopping and self-disclosing of traveling history). This corroborates the view that collectivistic cultures and authoritarian systems (indicating high power distance) reflect psychological adaptations to pathogen threats. By contrast, and consistent with H2, US participants were especially willing to accept individual-level precautions. Although such individual-level precautions inevitably limit individual rights, they can also be seen as an assertion of independent choices while serving behavioral immune functions.

There are some cross-society variations in the weight assigned to different types of considerations. For instance, US participants selected more moral considerations than did their Chinese and Japanese counterparts. However, the original expectation of cultural and social-structural variations in terms of predominant considerations, specified in H3 and H4, was not borne out. For society-level preventive measures, US participants did not differ significantly from their Chinese counterparts in the frequency of selecting societal considerations, while both Asian samples endorsed higher levels of personal considerations than did US participants. All three samples indicated similar levels of societal and personal considerations for individual-level preventive measures.

This may be because all three samples consisted of college students and thus, were quite homogeneous in terms of age and education. This may have masked potential cultural differences or reflect variations unrelated to the predominant cultural values in each society. Nonetheless, these findings are largely compatible with one of the key tenets of social domain theory, that individuals across different cultures develop similar types of social knowledge (moral, societal, and personal) and that therefore, there should be some cross-cultural similarities in the types of concerns individuals endorse and their influence on social judgments and attitudes (Smetana et al., 2014; Turiel, 1983, 2006). Common to all three samples and consistent with H5, we found that moral considerations regarding justice, welfare, and avoiding harm predicted higher acceptance of society-level preventive measures. Consistent with H6, personal considerations based on privacy and personal choice were associated with less acceptance of both society-level and individual-level measures. These findings held after controlling for perceived vulnerability to diseases, sense of control, existing governmental regulations, and subjective evaluation of the controllability and preventability of COVID-19.

More importantly, our hypothesis regarding expected cultural and social-structural effects on how people justify society-level preventive measures was confirmed (H7). The link between societal considerations and higher acceptance of society-level preventive measures was especially prominent in the Chinese sample, which represented a society with high power distance (Basabe & Ros, 2005; Hofstede & Bond, 1988). This is consistent with the intrasocietal-conflict model (Zhu et al., 2020), which posits that power moderates the relation between societal concerns and individuals' attitudes toward collective actions that restrict individual rights. However, Zhu et al. (2020) only compared two societies representing opposite ends of both the collectivism-individualism and the power-distance dimensions (i.e., the US and China). The current study also included Japan, which is similar to China in collectivistic values but differs in power distance (Basabe & Ros, 2005). The current results suggest that social structure played a prominent role in the broad Asian, collectivistic culture in predicting individuals' reasoning for collective actions. Specifically, high power distance in China might have fostered greater compliance with unified disease-control norms and methods promoted by the authority.

From a social domain perspective, people in collectivistic societies also aspire to make personal choices and have freedoms, and rights, which sometimes contradict the dominant cultural tenets that, for instance, emphasize societal welfare (Turiel, 2002). Indeed, we found that Chinese and Japanese participants selected more personal considerations than their US counterparts. Personal considerations were more strongly associated with lower acceptance of societal measures in the Chinese sample than in the other two samples. This apparently counterintuitive finding is consistent with Chen et al. (2007)'s finding that collective-minded individuals (as measured in terms of a more allocentric personality) are more sensitive to external norms (reflecting societal concern) than are non-collective-minded (as assessed in terms of a more idiocentric personality) individuals. When external norms that promote societal concerns and suppress personal concerns are not salient, personal concerns might take priority, leading to lower endorsement of societal interventions that restrict individual rights.

The three societies also differed in their prioritization of prudential considerations; closer analysis suggests that this was mainly due to the item "reduce personal risks of infection." Specifically, 62% of Chinese participants selected this as a major consideration in evaluating society-level preventive measures, compared with 27% of US participants and 2% of Japanese participants. More than 80% of Chinese and Japanese participants also prioritized this consideration when evaluating individual-level preventive measures, compared with 57% of US participants. Nevertheless, prudential considerations were not associated with individuals' support for preventive measures.

An analysis of individual differences sheds some light on certain cross-society differences. US participants were more likely to exhibit a higher sense of control than participants from Japan and China. This likely led them to believe that their own actions may influence outcomes, such as becoming infected with COVID-19 and might partially explain the higher acceptance of individual-level preventive measures in the US than in the other two societies. Japanese participants scored lower on preventability, suggesting that they viewed personal efforts as less effective in preventing infections with COVID-19. Existing research has found a strong link between the perceived effectiveness of personal prevention and compliance with preventive measures (e.g., Clark et al., 2020). Lower confidence in the preventability of the disease might prompt people to question the necessity of these preventive measures. This may partially explain Japanese participants' lower support for society-level and individual-level preventive measures compared with their US and Chinese counterparts. In comparison, Chinese participants tended to perceive COVID-19 as preventable and controllable, which might also prompt them to endorse prudential considerations more.

The number of governmental regulations reported in this study was largely consistent with a stringency index that tracked governments' non-pharmaceutical interventions throughout the world based on nine indicators such as school closures and travel bans (Hale et al., 2020). Participants' reports of governmental regulations were strongly associated with higher support for society-level measures. This might explain why Chinese participants, more than US and Japanese participants, endorsed society-level preventive measures. China's early implementation of lockdowns, which paid off in terms of reduced infection rates (Kraemer et al., 2020), might have boosted public support for further society-level preventive measures. However, even after controlling for the number of governmental regulations, societal considerations were still more strongly associated with higher support for society-level preventive measures in the Chinese sample than in the Japanese sample. This suggests that Chinese participants' support for society-level preventive measures were not merely a product of existing government responses.

Admittedly, caution should be taken when generalizing these findings. As noted earlier, our samples consisted of college students, who represented a narrow age range and had a similar educational background and their cultural values might deviate from the traditional ones in their society, leading to unexpected findings (e.g., the relatively greater emphasis on personal

concerns by Japanese participants). College students might also have unique characteristics relevant to their acceptance of COVID-19 prevention efforts. On the one hand, their educational background facilitates a trust in science, which is essential for understanding the effectiveness and necessity of scientifically guided preventive measures (Plohl & Musil, 2020). On the other hand, college students also belong to low-fatality age groups for COVID-19 (Jordan et al., 2020), which might lead some to underestimate their risks of severe illness and the importance of preventive measures. Further research is needed to expand the findings of this study to a broader age range with more diverse backgrounds.

Our findings regarding people's evaluation of preventive measures might also be affected by non-psychological factors that are unique to each society, such as the history of epidemic-control responses, being at different stages of the COVID-19 outbreak, and recent events unrelated to the pandemic (Reinders et al., 2020; Mackey & Liang, 2012). For example, after the 2003 outbreak of Severe Acute Respiratory Syndrome (SARS), enhanced public awareness of the danger of infectious diseases and experience of disease-control measures might have contributed to the public support for governmental interventions in China and neighboring countries (e.g., Syed et al., 2003). Moreover, the three countries were at different stages of the outbreak during the period of our study (April 20 to May 31, 2020), with confirmed cases climbing sharply in the United States (from 723,605 to 1,716,078) but largely stabilized in China (from 84,237 to 84,570). Japan also saw a considerable increase of cases over this period (from 10,751 to 16,851), but the overall numbers were comparably lower than the other two societies (WHO, 2020b, 2020c). As this research focused on individuals' approval of COVID-19 preventive measures in these three societies, we sought to include psychological factors that might contribute to people's judgments and behavioral decisions, and did not control for objective measures of pandemic severity (e.g., in terms of case numbers or infection density in each society). However, future research including individuals from a larger number of societies should take pandemic preparedness and severity into consideration, as well as other society-level characteristics (e.g., economic development, public-health infrastructure, political stability) that may contribute to cross-society differences in attitudes toward preventive measures.

To conclude, the efforts to combat COVID-19 depend not only on how many resources a government can muster or how stringent their policies are, but also on the support and cooperation of citizens for society-level and individual-level preventive measures, which complement each other in the fight against the pandemic. There are both similarities and differences across societies in individuals' evaluations of these measures. Such differences, especially those predicting the importance of societal concerns in people's attitudes toward collective actions, might be a function of social structures. In this regard, our findings in these three societies corroborated the view that cross-cultural differences in social judgments and attitudes are more nuanced than the individualistic/collectivistic division. Rather, individuals across cultures develop an understanding of others' welfare, societal functioning, and personal choices, although varying in the way of applying such knowledge given their cultural background and vertical social structures (Turiel, 2002; Zhu et al., 2020). These findings also have important implications for public health policymakers in different societies who seek to stimulate public cooperation with preventive measures. For example, whereas appealing to people's concerns of societal integrity and collective welfare might be very effective in China, the same type of message might not be as convincing among college students in the US and Japan. For messaging and interventions to be effective, it is vital to incorporate the types of beliefs and concerns that individuals in different contexts endorse.

Author Note

We are indebted to Yang Li for her invaluable assistance in translating the material into Japanese and recruiting participants in Japan.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethical Approval

The RSRB office of the University of Rochester deemed that the study meets federal and University criteria for exemption of ethical approval.

ORCID iDs

Nan Zhu https://orcid.org/0000-0002-7699-5054

Lei Chang https://orcid.org/0000-0001-6457-0254

Supplemental Material

Supplemental material for this article is available online.

References

Basabe, N., & Ros, M. (2005). Cultural dimensions and social behavior correlates: Individualism-collectivism and power distance. *International Review of Social Psychology*, *18*(1), 189–225.

Bond, R., & Smith, P. B. (1996). Culture and conformity: A meta-analysis of studies using Asch's (1952b, 1956) line judgment task. *Psychological Bulletin*, *119*(1), 111–137. https://doi.org/10.1037/0033-2909.119.1.111

Budryk, Z. (2020, May 3). Governors, experts await results of reopening states as protests continue. *The Hill*. https://thehill.com/homenews/sunday-talk-shows/495877-governors-experts-await-results-of-reopening-states-as-protests

Calvillo, D. P., Ross, B. J., Garcia, R. J., Smelter, T. J., & Rutchick, A. M. (2020). Political ideology predicts perceptions of the threat of COVID-19 (and susceptibility to fake news about it). *Social Psychological and Personality Science*, *11*(8), 1119–1128. https://doi.org/10.1177/1948550620940539

Chen, X. P., Wasti, S. A., & Triandis, H. C. (2007). When does group norm or group identity predict cooperation in a public goods dilemma? The moderating effects of idiocentrism and allocentrism. *International Journal of Intercultural Relations*, *31*(2), 259–276. https://doi.org/10.1016/j.ijintrel.2006.02.004

Clark, C., Davila, A., Regis, M., & Kraus, S. (2020). Predictors of COVID-19 voluntary compliance behaviors: An international investigation. *Global Transitions*, *2*, 76–82. https://doi.org/10.1016/j.glt.2020.06.003

Duncan, L. A., Schaller, M., & Park, J. H. (2009). Perceived vulnerability to disease: Development and validation of a 15-item self-report instrument. *Personality and Individual Differences*, *47*(6), 541–546. https://doi.org/10.1016/j.paid.2009.05.001

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Fincher, C. L., & Thornhill, R. (2012). Parasite-stress promotes in-group assortative sociality: The cases of strong family ties and heightened religiosity. *Behavioral and Brain Sciences*, *35*(2), 61–79. https://doi.org/10.1017/S0140525X11000021

Germani, A., Buratta, L., Delvecchio, E., & Mazzeschi, C. (2020). Emerging adults and COVID-19: The role of individualism–collectivism on perceived risks and psychological maladjustment. *International Journal of Environmental Research and Public Health*, *17*(10), 3497. https://doi.org/10.3390/ijerph17103497

Hale, T., Webster, S., Petherick, A., Phillips, T., & Kira, B. (2020). *Oxford COVID-19 government response tracker [Infographic]*. https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker.

Harper, C. A., Satchell, L. P., Fido, D., & Latzman, R. D. (2020). Functional fear predicts public health compliance in the COVID-19 pandemic. *International Journal of Mental Health and Addiction*. https://doi.org/10.1007/s11469-020-00281-5

Helwig, C. C. (1995). Adolescents' and young adults' conceptions of civil liberties: Freedom of speech and religion. *Child Development*, *66*(1), 152–166. https://doi.org/10.1111/j.1467-8624.1995.tb00862.x

Helwig, C. C. (1998). Children's conceptions of fair government and freedom of speech. *Child Development*, *69*(2), 518–531. https://doi.org/10.1111/j.1467-8624.1998.tb06205.x

Hofstede, G., & Bond, M. H. (1988). The confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, *16*(4), 5–21. https://doi.org/10.1016/0090-2616(88)90009-5

Imhoff, R., & Lamberty, P. (2020). A bioweapon or a hoax? The link between distinct conspiracy beliefs about the Coronavirus disease (COVID-19) outbreak and pandemic behavior. *Social Psychological and Personality Science*, *11*(8), 1110–1118.

Inglehart, R. (1997). *Modernization and postmodernization*. Princeton University Press.

Jordan, R. E., Adab, P., & Cheng, K. K. (2020). Covid-19: Risk factors for severe disease and death. *British Medical Journal*, *368*, m1198. https://doi.org/10.1136/bmj.m1198

Kessler, T., & Cohrs, J. C. (2008). The evolution of authoritarian processes: Fostering cooperation in large-scale groups. *Group Dynamics: Theory, Research, and Practice*, *12*(1), 73–84. https://doi.org/10.1037/1089-2699.12.1.73

Kim, H. S., Sherman, D. K., & Updegraff, J. A. (2016). Fear of Ebola: The influence of collectivism on xenophobic threat responses. *Psychological Science*, *27*(7), 935–944. https://doi.org/10.1177/0956797616642596

Kraemer, M. U., Yang, C. H., Gutierrez, B., Wu, C. H., Klein, B., Pigott, D. M., Open COVID-19 Data Working Group., du Plesis, L., Faria, N. R., Li, R., Hanage, W. P., Scarpino, S. V., Layan, M., Vespignani, A., Tian, H., Dye, C., & Brownstein, J. S. (2020). The effect of human mobility and control measures on the COVID-19 epidemic in China. *Science*, *368*(6490), 493–497. https://doi.org/10.1126/science.abb4218

Lachman, M. E., & Weaver, S. L. (1998). The sense of control as a moderator of social class differences in health and well-being. *Journal of Personality and Social Psychology*, *74*(3), 763–773. https://doi.org/10.1037/0022-3514.74.3.763

Lee, M., & You, M. (2020). Psychological and behavioral responses in South Korea during the early stages of coronavirus disease 2019 (COVID-19). *International Journal of Environmental Research and Public Health*, *17*(9), 2977. https://doi.org/10.3390/ijerph17092977

Mackey, T. K., & Liang, B. A. (2012). Lessons from SARS and H1N1/A: Employing a WHO–WTO forum to promote optimal economic-public health pandemic response. *Journal of Public Health Policy*, *33*(1), 119–130. https://doi.org/10.1057/jphp.2011.51

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, *98*(2), 224–253. https://doi.org/10.1037/0033-295X.98.2.224

Murray, D. R., Schaller, M., & Suedfeld, P. (2013). Pathogens and politics: Further evidence that parasite prevalence predicts authoritarianism. *PloS One*, *8*(5), e62275. https://doi.org/10.1371/journal.pone.0062275

Nucci, L. (1981). Conceptions of personal issues: A domain distinct from moral or societal concepts. *Child Development*, *52*(1), 114–121. https://doi.org/10.2307/1129220

Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin*, *128*(1), 3–72. https://doi.org/10.1037/0033-2909.128.1.3

Painter, M., & Qiu, T. (2020). *Political beliefs affect compliance with COVID-19 social distancing orders*. https://doi.org/10.2139/ssrn.3569098

Pakpour, A. H., & Griffiths, M. D. (2020). The fear of COVID-19 and its role in preventive behaviors. *Journal of Concurrent Disorders*, *2*(1), 58–63. https://concurrentdisorders.ca/2020/04/03/the-fear-of-covid-19-and-its-role-in-preventive-behaviors/

Plohl, N., & Musil, B. (2020). Modeling compliance with COVID-19 prevention guidelines: The critical role of trust in science. *Psychology, Health & Medicine*, *26*(1), 1–12. https://doi.org/10.1080/13548506.2020.1772988

Protests Over Responses to COVID-19 Pandemic. (n.d.). *In Wikipedia*. https://en.wikipedia.org/wiki/Protests_over_responses_to_the_COVID-19_pandemic

Reinders Folmer, C. R., Brownlee, M., Fine, A., Kuiper, M. E., Olthuis, E., Kooistra, E. B., de Bruijn, A. L., & van Rooij, B. (2020). *Social distancing in America: Understanding long-term adherence to Covid-19 mitigation recommendations* (Amsterdam Law School Research Paper No. 2020-62). https://doi.org/10.2139/ssrn.3736683

Schaller, M., & Park, J. H. (2011). The behavioral immune system (and why it matters). *Current Directions in Psychological Science*, *20*(2), 99–103. https://doi.org/10.1177/0963721411402596

Smetana, J. G. (2011). Adolescents' social reasoning and relationships with parents: Conflicts and coordinations within and across domains. In E. Amsel & J. G. Smetana (Eds.), *Adolescent vulnerabilities and opportunities: Developmental and constructivist perspectives* (Vol. 38, pp. 139–158). Cambridge University Press.

Smetana, J. G., Jambon, M., & Ball, C. (2014). The social domain approach to children's social and moral judgments. In M. Killen & J. Smetana (Eds.), *Handbook of moral development* (pp. 23–45). Psychology Press.

Syed, Q., Sopwith, W., Regan, M., & Bellis, M. A. (2003). Behind the mask. Journey through an epidemic: Some observations of contrasting public health responses to SARS. *Journal of Epidemiology & Community Health*, *57*(11), 855–856. https://doi.org/10.1136/jech.57.11.855

Tan, B. C., Wei, K. K., Watson, R. T., Clapper, D. L., & Mclean, E. R. (1998). Computer-mediated communication and majority influence: Assessing the impact in an individualistic and a collectivistic culture. *Management Science*, *44*(9), 1263–1278. https://doi.org/10.1287/mnsc.44.9.1263

Tisak, M. S., & Turiel, E. (1984). Children's conceptions of moral and prudential rules. *Child Development*, *55*(3), 1030–1039. https://doi.org/10.2307/1130154

Triandis, H. C., Bontempo, R., Villareal, M. J., Asai, M., & Lucca, N. (1988). Individualism and collectivism: Cross-cultural perspectives on self-ingroup relationships. *Journal of Personality and Social Psychology*, *54*(2), 323–338. https://doi.org/10.1037/0022-3514.54.2.323

Turiel, E. (1983). *The development of social knowledge: Morality and convention*. Cambridge University Press.

Turiel, E. (2002). *The culture of morality*. Cambridge University Press.

Turiel, E. (2006). The development of morality. In W. Damon, R. M. Lerner, & N. Eisenberg (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (Vol. 3, 6th ed., pp. 789–857). Wiley.

Wise, T., Zbozinek, T. D., Michelini, G., Hagan, C. C., & Mobbs, D. (2020). Changes in risk perception and protective behavior during the first week of the COVID-19 pandemic in the United States. PsyArXiv. https://psyarxiv.com/dz428/

World Health Organization. (2020a). *Coronavirus disease (COVID-19) advice for the public*. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public

World Health Organization. (2020b). *Coronavirus disease 2019 (COVID-19) situational report – 91*. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

World Health Organization. (2020c). *Coronavirus disease 2019 (COVID-19) situational report – 132*. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

Wu, B. P., & Chang, L. (2012). The social impact of pathogen threat: How disease salience influences conformity. *Personality and Individual Differences*, *53*(1), 50–54. https://doi.org/10.1016/j.paid.2012.02.023

Zhu, N., Hawk, S. T., & Smetana, J. G. (2020). The influence of power on US and Chinese individuals' judgments and reasoning about intrasocietal conflicts. *Journal of Cross-Cultural Psychology*, *51*(1), 77–105. https://doi.org/10.1177/0022022119893109