Research Square

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It's Not the Flu: Popular perceptions of the impact of COVID-19

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Abstract

Messaging from authorities about COVID-19 has been widely divergent. This research aims to clarify popular perceptions of the threat of COVID-19 and its effects on victims. In four studies with over 4,100 U.S. participants, we consistently found that people perceive the threat of COVID-19 to be substantially greater than that of several other causes of death to which it has recently been compared, including the seasonal flu and automobile accidents. Participants were less willing to help COVID-19 victims, who they considered riskier to help, more contaminated, and more responsible for their condition. Additionally, politics and demographic factors predicted attitudes about victims of COVID-19 above and beyond moral values; whereas attitudes about the other kinds of victims were primarily predicted by moral values. The results indicate that people perceive COVID-19 as an exceptionally severe disease threat, and despite prosocial inclinations, do not feel safe offering assistance to COVID-19 sufferers.

Statement Of Relevance

This research reveals a divergence between popular perceptions and politicized rhetoric about COVID-19 with urgent applied significance. Our findings that people attribute more responsibility – which underpins blame – to people who contract COVID-19, and are less willing to help COVID-19 victims relative to victims of other adversities; and, that COVID-19 victims are regarded less as suffering people than as contagion vectors, are relevant to public health efforts and campaigns working to address extended damage to society and the economy from the pandemic. In particular, efforts to educate the public about the health impacts of COVID-19, encourage compliance with testing protocols and contact tracing, and support safe, prosocial decision-making and risk assessment, will all benefit from awareness of these findings. Additionally, the results suggest solutions, such as engaging people's stable values rather than their politicized perspectives on COVID-19 to reduce stigma and divisiveness, and promote cooperation in response to the pandemic.

As the novel coronavirus (COVID-19) emerged in late 2019, and the ensuing pandemic claimed tens of thousands of American lives in the Spring and Summer of 2020, U.S. leadership delivered conflicting messages to the public. Famously, President Trump has repeatedly expressed a lack of concern, equating COVID-19 with the seasonal flu and deaths from automobile accidents. For example, on March 9, 2020, when the U.S. stock market plummeted over fears of the spread of the coronavirus, he tweeted, "…last year 37,000 Americans died from the common Flu. It averages between 27,000 and 70,000 per year. Nothing is shut down, life & the economy go on." Public health officials have contested such sanguine assessments: for example, pandemic expert Irwin Redlener, director of the National Center for Disaster Preparedness, declared, "It's not responsible of governors to rush into a return to business as usual, even if it's relatively slow," he said. "This is a serious risk. We're playing with fire" (Bredderman & Messer, 2020).

Unsurprisingly, given this conflicting messaging from authorities, Americans' response to the pandemic was highly variable. While many people defied, and even protested, requirements for mask wearing, social distancing, and economic shutdowns, many others viewed the pandemic with considerable alarm, even taking precautions before they were required (Bump, 2020; Burnett, 2020; Malone & Bourassa, 2020; Dave, Friedson, Matsuzawa, McNichols, Sabia, 2020). With so much at stake for both health and the economy, it is crucial to understand popular perceptions of the hazards of COVID-19 and the sources of their diversity. In this article, we ask: given mixed messages about the risk and impact of COVID-19, how do people perceive the threat to them, and the severity of its impact on others?

Hypothesis Development

This research involves four studies with more than 4,100 participants within the United States in late April and early May of 2020. First, we examine whether popular perceptions of COVID-19 comport with comparisons with the flu and vehicle collisions. The outcome variables we investigate are willingness to help and perceptions of the risk of helping people and communities affected by COVID-19 (*versus* non-COVID-19 threats), as well as perceptions of victims as contaminated, injured, and responsible for their condition.

We hypothesize that, on average, people perceive victims of COVID-19 very differently from non-COVID-19 victims (flu, car accident, HIV/AIDS, and severe storm) – namely, people view COVID-19 victims as riskier to help, more responsible for their condition, more contaminated, and, people will be less willing to help them.

To the extent that people vary in how they perceive the threat of COVID-19 and its impact on victims, what explains this variability? We expect that it is explained by individual differences in people's moral values, as well as demographic characteristics including political orientation, gender, education, and income level.

According to Moral Foundations Theory (MFT; e.g., Haidt, 2007; Graham, Haidt & Nosek, 2009; Graham et al., 2011), conservative people tend to endorse the group-oriented "binding values" of (1) loyalty, (2) respect for authority, and (3) purity more highly than liberal people, who tend to favor the "individualizing values" that emphasize (4) fairness and (5) care. Unlike individualizing values which stipulate unbiased extension of moral concern, binding values foster group boundaries and "us vs. them" dynamics through (a) reciprocal bonds of loyalty, (b) deference to the authorities in the hierarchies that structure groups, and (c) commitment to preserving purity by rejecting people and behaviors that "contaminate" the integrity of the group. These features suggest that binding values might drive a heightened perception of the threat of COVID-19, despite the relationship of binding values with conservatism, and conservative rhetoric expressing skepticism about COVID-19 dangers.

Alternatively, because binding values promote preserving the integrity of groups, people higher in binding values may be expected to show increased willingness to help people and communities affected by COVID-19. However, we favor the hypothesis that people higher in binding values may actually be *less*

willing to help, given the rationale for expecting people high in binding values to tend to view those affected by COVID-19 as more contaminated and riskier to help. Furthermore, less willingness to help COVID-19 victims may be illustrative of a general tendency for people higher in binding values, regardless of politics, to judge victims with less sensitivity. Prior research shows that people higher in binding values are more likely to stigmatize victims as tainted and contaminated, judge victims as more responsible and blameworthy for their own victimization, and are less likely to defend victims of sexual harassment by confronting and reporting harassment (Goodwin, Graham & Diekmann, 2020; Niemi & Young, 2016; Niemi, Hartshorne, Gerstenberg, Stanley & Young, 2020). By contrast, people higher in individualizing values, which are associated with increased sensitivity to suffering and do not emphasize contamination risks, may be more willing to help those affected by the coronavirus.

In addition to measuring attitudes and individual differences in values, we consider the contribution of political orientation, gender, education, and income level. Finally, in order to illuminate the degree to which the salience of different moral values may be altered, and thereby influence attitudes, we examine whether increasing the salience of either binding or individualizing values through priming affects the outcome variables. Given prior research showing efficacy in priming moral values, in these studies we anticipated small effects for priming binding and individualizing values (Mooijman et al., 2018; Goenka & Thomas, 2020).

This research builds on recent applications of the social, behavioral, and psychological sciences to understand and navigate the myriad challenges posed by COVID-19 (e.g., Kniffin et al., 2020; van Bavel et al., 2020). These studies have theoretical utility in illuminating the role of moral values in social perception and decision-making, and also applied utility for policymakers, researchers, and citizens responding to COVID-19, and other public health emergencies.

Methods

The first set of studies was administered between April 24 - 27 (Study 1a & Study 2) in the United States. At this time, most Americans were under shut-down orders and complying with them; however, it was unclear the extent to which people's behavior reflected their attitudes. There was increasing media focus on people's politically sourced disapproval of government COVID-19 policy, centered around coverage of protests against the shutdowns which began on April 15. The second set of studies was administered on May 8-13 (Studies 1b- 1c) in the United States. By this point, shutdown orders largely remained, but some communities were already beginning to pursue re-opening.

Procedure (All Studies)

A university Institutional Review Board approved all of the studies here. All studies were implemented using Qualtrics survey software and distributed to participants online via Prolific. Studies were preregistered through AsPredicted.org (see Supplementary Materials) as part of a series focused on understanding how MFT is related to individual attitudes concerning COVID-19. De-identified data and study materials are archived in the corresponding authors online data repository on Github (see

Supplementary Materials for link). Independent participant pools were recruited for each study. The procedure for each study involved the following materials, described in detail in the next section: (1) a moral values prime,(2) a vignette and series of questions measuring attitudes about individual victims and affected communities, and (3) individual difference measures of moral values, political orientation, and demographics. Attention checks were identical across the studies and participants were excluded if they failed either of the two embedded attention checks, or an attention check at the end of the studies.

Materials and Measures (All Studies)

Participants in all studies first encountered the binding, individualizing, or control prime. The primes were used effectively in prior research (Mooijman et al., 2018; Goenka & Thomas, 2020). In Studies 1a, 1b, and 2, the primes described a warrior who exemplifies loyalty, respectfulness, and concern about purity (binding values), or caring and fairness (individualizing values), or who has good character (control). In Study 1c, we replaced the warrior primes with another set of primes found to be effective in prior research, in which participants read about a scholar's ideas about moral values and wrote a response (Mooijman et al., 2018).

Participants in all studies then read a vignette about a person or community, and subsequently, participants' attitudes, the key outcome variables, were measured with a series of questions. In Studies 1a, 1b, and 1c, participants read about "Dan," who was affected by either COVID-19, the seasonal flu, or a car accident: "In March 2020, Dan drove across the country for work, and stopped at many cities and towns in several states. Along the way, he [contracted the coronavirus and became very sick; contracted the seasonal flu and became very sick; got into a serious car accident and sustained numerous injuries]." After the vignette, using Likert-scales (1-7), participants rated: "How responsible is Dan for the car accident?" (on one page); "How willing would you be to assist Dan?" and "How risky would it be for you to assist Dan?" (on the next page); and "How injured is Dan?" and "How contaminated is Dan?" (on the next page). In Study 1a, we also examined but do not discuss here whether judgments would be affected by how contagiousness was conveyed (see Supplementary Materials for text of vignettes).

In Study 2, rather than provide assessments of an individual flu or car accident victim, participants read about an unnamed community: "Since March of 2020, residents of a large community have been hit hard by [an outbreak of the coronavirus; HIV/AIDS; a severe storm], and the city's infrastructure has been overwhelmed by victims needing care. Officials have called for donations, and volunteers to assist the relief effort in soup kitchens, homeless shelters, and medical facilities." After the vignette, using Likert-scales (1-7), participants rated (each on a separate page): "How likely would you be to volunteer at [soup kitchen, homeless shelter, medical facilities]?" "How likely would you be to donate to [soup kitchen, homeless shelter, medical facilities]?" "How risky to your health do you think volunteering would be?"

Next, in all studies we measured participants' endorsement of the five moral values of Moral Foundations Theory – caring, fairness, loyalty, obedience to authority, and purity values – with the Moral Foundations Questionnaire (MFQ-30, Graham et al., 2011). We averaged caring and fairness values for the individualizing values scores, and loyalty, authority, and purity values for the binding values score. At the

end of the Study 1b, we also asked participants to identify a warrior quality from the vignette as an attention check. Finally, participants took a brief demographics survey, and we measured political orientation with the item (Iyer, Koleva, Graham, Ditto, Haidt, 2012): “When it comes to politics, do you usually think of yourself as liberal, moderate, conservative, or something else?” – a drop-down menu contained the choices: (1) Very liberal, (2) Liberal, (3) Slightly liberal, (4) Moderate/middle-of-the-road, (5) Slightly conservative, (6) Conservative, (7) Very conservative, (8) “Don’t know/not political”, (9) “Libertarian,” (10) Other. The item included the note: “The terms used in your country may differ. "Liberal" is intended to include the Left, progressives, and in some countries, socialists. "Conservative" is intended to include the Right, traditionalists, and in some countries Christian Democrats.” We used selections 1-7 as a scale variable representing the extent of participants’ self-identification as politically liberal or conservative.

Results

Study 1a

Participants. Study 1a included 1,627 participants (836 female, 765 male, 26 other) with 72 exclusions based on failure of attention checks. The sample size was calculated to yield at least 50 participants per condition, plus ten additional participants in each condition to account for typical rates of exclusion. The average age of the participants was 36.4 (*SD*=13.0) years old; 90% of participants were not Hispanic or Latino, 10% were Hispanic or Latino, 74% White or European-American, 7% Black or African-American, 12% Asian or Asian-American, less than 1% Native American or Pacific Islander, 4% Multiracial, and 1.5% selected other. Combined annual income was: 22% less than $30,000; 20% between 30,000-49,999; 18% between 50,000-69,999, 19% between 70,000-99,999, and 19% 100,000+. The majority, 43%, of participants were liberal or very liberal; a similar percentage, 39%, was slightly liberal, middle-of- the-road, or slightly conservative; 12% were conservative or very conservative; 3% did not know or were not political; 1% selected libertarian; 1% selected other. Participants were from all four regions of the US: West (24%), Midwest (20%), Northeast (22%) and South (34%).

Study 1a Results. We conducted analyses of variance to investigate the influence of the “damage type” – COVID-19, seasonal flu, or car accident – on whether participants considered the protagonist responsible, contaminated, and injured, their willingness to help him, and how risky they considered helping him; as well as whether priming with binding values increased perception of Dan as responsible, contaminated, and risky to help, and decreased willingness to help.

For **responsibility**, we found a significant main effect of the prime ($F(2,4.031) = 8.326$, $p = .037$, partial eta^2=.805), a significant main effect of damage type ($F(2,4.031) = 174.036$, $p < .000$, partial eta^2= .989), and no interactions: priming binding values caused the highest responsibility ratings (*M*=3.82, *SEM*=.07), significantly higher than individualizing values (*M*=3.58, *SEM*=.06, *p*=.009) but not significantly higher than control (*M*=3.72 *SEM*=.07, *p*=.25). Ratings of Dan’s responsibility (see means in Figure 1) were

highest for being infected with COVID-19, higher than responsibility ratings for the car accident (p<.000) and seasonal flu (p=.003).

For **contamination, injury**, **riskiness**, and **willingness to help**, we found significant main effects of damage type only (see means in Figure 1). Contamination ratings were highest in the case of COVID-19, higher than the flu (p<.000), and higher than the car accident (p<.000; F(2,4.003) = 448.00, p < .000, partial eta2= .996). Dan was rated most injured by the car accident, followed by COVID-19 (p<.000), and the flu (p<.000; F(2,4.04) = 2487.68, p < .000, partial eta^2=.999). People considered helping Dan to be riskiest when he contracted COVID-19, compared to the flu, or a car accident (p<.000; F(2,4.040) = 2693.42, p < .000, partial eta^2= .999). People were significantly less willing to help the COVID-19 victim compared to the flu victim and the car accident victim (p<.000; F(2,4.004) = 68.96, p = .001, partial eta^2= .972).

Study 1a Summary. Result suggest that the perceived threat to health and safety from COVID-19 was elevated compared to the flu or a car accident: participants were less willing to help COVID-19 victims, and considered them riskier to help, more responsible, and more contaminated than flu and car accident victims.

Study 1b

Participants. Study 1b included 1009 participants (510 female, 494 male, 5 other) with 73 exclusions based on failure of attention checks. The majority of participants in each prime condition identified the correct word from the vignette they read (individualizing 81%; binding 66%, control 71%). The sample size was calculated to yield at least 50 participants per condition, plus ten additional participants to each condition to account typical rates of exclusion. The average age of the participants was 38.9 (SD = 13.7); 93% of participants were not Hispanic or Latino, 7% were Hispanic or Latino, 79% White or European-American, 7% Black or African-American, 10% Asian or Asian-American, less than 1% Native American or Pacific Islander, 3% Multiracial and 1% selected other. Combined annual income was: 18% less than $30,000; 20% between 30,000 - 49,999; 18% between 50,000 - 69,999, 22% between 70,000 - 99,999, and 23% 100,000+. The majority of participants, 42%, were liberal or very liberal; a similar percentage, 41%, was slightly liberal, middle-of-the-road, or slightly conservative; 13% were conservative or very conservative; 2% did not know or were not political; ~2% selected libertarian; <1% selected other. Participants were from all four regions of the US: West (22%), Midwest (23%), Northeast (19%) and South (36%).

Study 1b Results. We conducted identical analyses as in Study 1a. Again (see Figure 1), there were significant main effects of damage type on all outcome variables: **responsibility** (F(2,1000) = 64.75, p < .001, partial eta^2= .97), **contamination** (F(2,1000) = 339.76, p < .001, partial eta^2= .994), **injury** (F(2,1000) = 281.46, p < .001, partial eta^2=.993), **willingness to help** (F(2,1000) = 126.0, p < .000, partial eta2= .98), and **risk** (F(2,1000) = 177.12, p < .001, partial eta^2= .989), there was a significant effect of damage type, only. As in Study 1a, these results indicated that ratings of contamination and perceived risk of helping were highest for COVID-19, followed by the flu and the car accident. Ratings of injury were highest for the

car accident, followed by COVID-19, and the flu. Ratings of responsibility were highest in the case of COVID- 19, followed by the car accident and the flu. Finally, willingness to help was highest for the car accident victim, followed by the flu, and COVID-19.

Study 1b Summary. Relative to the flu and car accident victim, participants were again less willing to help the COVID-19 victim, who was considered significantly riskier to help, more contaminated, and more responsible.

Study 1c

In Study 1c, we replaced the "warrior" primes from Studies 1a-b with another set of primes for binding and individualizing values that have been found to be effective in prior research (Mooijman et al., 2018). These primes involved reading a short passage about morality by a purported "morality scholar," arguing that either the well-being of the group (binding values condition) or the well-being of individuals (individualizing values condition) is central to morality. Participants then wrote a brief response essay discussing their perspective on the scholar's ideas about morality. In the control condition, participants did not read or write a passage.

Study 1c Participants. Study 1c included 1026 participants (422 female, 593 male, 11 other) plus 54 exclusions based on failure of attention checks. The sample size was calculated as in Study 1b. The average age of the participants was 37.7 (SD = 14.7); 90% of participants were not Hispanic or Latino, 10% were Hispanic or Latino, 75% White or European-American, 10% Black or African-American, 8% Asian or Asian-American, 1% Native American or Pacific Islander, 4% Multiracial, and 2% selected other. Combined annual income was: 25% less than $30,000; 20% between 30,000-49,999; 17% between 50,000-69,999, 20% between 70,000- 99,999, and 19% 100,000+. The majority of participants, 45%, were liberal or very liberal; a similar percentage, 37%, was slightly liberal, middle-of-the-road, or slightly conservative; 12% were conservative or very conservative; 3% did not know or were not political; 1% selected libertarian; 2% other. Participants were from all four regions of the US: West (24%), Midwest (21%), Northeast (21%) and South (34%).

Study 1c Results. Analyses were identical to Studies 1a-b. We again found significant main effects for damage type on all the outcome variables: **responsibility** ($F(2,1016) = 20.75$, $p = .008$, partial eta^2= .91), **contamination** ($F(2,1016) = 186.4$, $p < .001$, partial eta^2= .989), **injury** ($F(2,1016) = 177.95$, $p < .001$, partial eta^2=.989), **willingness to help** ($F(2,1016) = 32.38$, $p < .000$, partial eta^2= .94), and **risk** ($F(2,1016) = 122.17$, $p < .001$, partial eta^2= .984). As in Studies 1a-b, these results indicated (see Figure 1) ratings of contamination and risk were highest for COVID-19, followed by the flu, and the car accident; ratings of injury were highest for the car accident, followed by COVID-19, and the flu; ratings of responsibility were highest for COVID-19, followed by the car accident, and the flu; willingness to help was highest for the car accident victim, followed by the flu, and COVID-19.

Study 1c Summary. Once again, people were less willing to help the COVID-19 victim, who was considered significantly riskier to help, more contaminated, and more responsible than a flu or car

accident victim.

Study 2

Binding values reflect group-level moral concerns; as such, Study 2 aimed to shed light on whether binding values would affect judgments of communities (groups) differently than they affected judgments of individuals. We investigated whether perceived risk and willingness to help a community, rather than an individual victim, would vary with moral values and damage type.

Study 2 Participants. Study 2 included 571 participants (317 female, 218 male, 4 other) with 23 exclusions based on failure of attention checks. The sample size was calculated to yield at least 50 participants per condition, plus ten additional participants in each condition to account for typical rates of exclusion. The average age of the participants was 35.7 (SD = 12.2); 92% of participants were not Hispanic or Latino, 8% were Hispanic or Latino, 79% White or European-American, 8% Black or African-American, 7% Asian or Asian-American, less than <1% Native American or Pacific Islander, 4% Multiracial and 1.3% selected other. Combined annual income was: 19% less than $30,000; 20% between 30,000-49,999; 20% between 50,000-69,999, 21% between 70,000-99,999, and 19% 100,000+. The majority of participants, 43%, were liberal or very liberal; a similar percentage, 39% was slightly liberal, middle-of-the-road, or slightly conservative (39%); 13% were conservative or very conservative; 2% did not know or were not political; <1% selected libertarian, <1% selected other. Participants were from all four regions of the US: West (18%), Midwest (23%), Northeast (24%) and South (35%).

Study 2 Results. We used analyses of variance to investigate whether participants would be less willing to help (donate to or volunteer in) an unnamed community affected by COVID-19, and how they perceived the risk of helping, when binding values were made salient, versus individualizing values or control (no prime). As in the previous studies, we varied damage type such that the community was affected by COVID-19, HIV/AIDS, or a severe storm. We also examined whether effects differed on the targets of donations and volunteering (soup kitchen, homeless shelter, medical facilities).

Consistent with the previous studies, we found a significant main effect of damage type for **volunteering** ($F(2,531) = 7.62$, $p < .001$, partial eta^2= .028): participants were less willing to volunteer in the case of a community affected by COVID-19, compared to HIV/AIDS or a severe storm (*p's*<.005; see means in Figure 2). There was no effect of the moral values primes. For **donation,** no effects were significant. For **riskiness,** we again found a significant main effect of damage type ($F(2,531) = 85.1$, $p < .001$, partial eta^2= .24): people considered volunteering riskiest in a community affected by COVID-19, compared to HIV/AIDS or a severe storm (*p's*<.000, see Figure 2). Finally, merging across volunteering and donating, there was a significant effect of helping location ($F(2,1062) = 44.00$, $p < .001$, partial eta^2= .08): people preferred to help a soup kitchen, followed by a homeless shelter, and then medical facilities.

Study 2 Summary. Consistent with the previous studies examining an individual victim, participants were less willing to help a community of COVID-19 victims, relative to HIV/AIDS and storm victims, and considered helping the COVID-19 victims to be riskier.

All studies: Stable moral values, politics, and demographics analyses

We examined whether people's stable moral values (binding values and individualizing values) predicted attitudes about victims, along with politics, gender, education, and income (politics from 1-7: very liberal to very conservative, gender: male (0) and female (1), income in increments from 1-7: under $30K to $100K and over per year, and education from 1-6: some high school, high school, some university/college, university/college, graduate degree, doctoral or professional degree (e.g., M.D., J.D., etc.). We conducted a series of regression analyses on our outcome variables by damage condition (COVID-19, flu, car accident). We entered moral values (binding values, individualizing values) in step one, and politics, education, gender, and income in step two, to predict (a) responsibility, (b) contamination, (c) injury, (d) perceived risk, and (e) willingness to help. The results for all studies are presented in Table 1, where standardized Beta coefficients and significance levels, R^2 change values and significance levels, and averaged R^2 change values are indicated; significant ($p<.05$) values indicated in bold.

As visible in Table 1, the results of the regression analyses indicate that moral values played a role in people's judgments of both COVID-19 and non-COVID-19 victims; however, moral values consistently played a stronger role in judgments about victims of *non*-COVID-19 damage. Specifically, binding or individualizing values significantly predicting judgments in cases of *non*-COVID-19 victims 45% of the time (38/84 tests) and COVID-19 victims 21% of the time (9/42 tests). Averaging R^2 change across all studies to estimate the variability accounted for by the predictors (Johnson & LeBreton, 2004; see Table 1), for non-COVID-19 victims, total R^2 change accounted for by binding and individualizing values was: responsibility 1.9%, contamination 3.7%, injury 1.7%, risk 4.7%, and willingness to help 4.7%. For COVID-19 victims, total R^2 change accounted for by binding and individualizing values was: responsibility 0.9%; contamination 2.9%, injury 2.1%, risk 1.8%, and willingness to help 1.6%.

Table 1.

Results of regression analyses of judgments of responsibility, contamination, injury, riskiness of helping, and willingness to help for COVID-19 and non-COVID-19 victims in Studies 1a-c and 2.

	COVID-19							FLU							CAR ACCIDENT							COVID	NON-COVID
	Beta	R2 change	Beta	R2 change	Beta	R2 change	Average R2 change	Beta	R2 change	Beta	R2 change	Beta	R2 change	Average R2 change	Beta	R2 change	Beta	R2 change	Beta	R2 change	Average R2 change	Average R2 change	Average R2 change
RESPONSIB	*1a*		*1b*		*1c*			*1a*		*1b*		*1c*			*1a*		*1b*		*1c*				
Binding	.10	.00	**.16**	.02	.09	.01	*0.9%*	**.13**	**.01**	**.17**	**.03**	**.25**	.03	*2.6%*	.08	.00	-.01	02	**14**	.02	*1.1%*	*0.9%*	*1.9%*
Individualizin	-.03		.02		.07			-.04		-.02		-.03			.00		-.07		**-.14**				
Politics	**-.14**	**.01**	**-.17**	**.05**	-.07	.01	*2.3%*	-.05	**.03**	.01	.00	-.15	.02	*1.6%*	-.04	.01	.07	03	-.12	.03	*2.1%*	*2.3%*	*1.9%*
Education	.00		-.02		-.06			-.07		-.03		-.11			.10		.10		10				
Gender	.03		-.08		-.06			**-.12**		**-.01**		.03			-.05		.05		-.05				
Income	.00		**-.15**		-.01			-.07		.04		.05			-.05		-.10		06				
CONTAMINATED																							
Binding	.17	**.03**	**.14**	**.05**	.12	.01	*2.9%*	.19	**.04**	**.16**	**.07**	.21	**.07**	*6.3%*	**.19**	**.01**	.09	00	**21**	.02	*1.0%*	*2.9%*	*3.7%*
Individualizin	.10		**.14**		.01			.12		**.20**		.16			-.02		-.12		-.04				
Politics	-.04	.01	**-.14**	**.04**	-.14	.03	*2.6%*	-.06	.01	-.04	.03	-.06	.01	*1.5%*	**-.16**	**.02**	**-.15**	**07**	**-.17**	.03	*3.8%*	*2.6%*	*2.7%*
Education	-.10		-.05		-.06			-.06		.06		.03			.06		**.11**		08				
Gender	.03		**.16**		.11			-.01		.10		.05			.05		**.19**		06				
Income	.02		-.01		.04			-.01		.10		-.08			-.05		-.06		-.03				
INJURED																							
Binding	.09	.01	.05	**.02**	**.22**	**.04**	*2.1%*	**.14**	**.03**	**.19**	.00	.10	.00	*1.2%*	-.05	**.03**	-.11	**03**	09	.01	*2.1%*	*2.1%*	*1.7%*
Individualizin	.04		.11		.08			**.11**		-.06		-.10			**.14**		**.25**		04				
Politics	-.03	.00	-.10	.03	**-.17**	**.03**	*1.9%*	-.01	.01	**-.23**	.05	-.15	.03	*2.8%*	-.01	.01	**.20**	**03**	-.14	.01	*1.9%*	*1.9%*	*2.3%*
Education	.02		**.14**		**.11**			-.06		.04		.07			**.12**		.09		-.03				
Gender	-.05		.02		.03			-.03		-.02		.04			-.01		.02		01				
Income	.01		-.04		-.03			-.01		**-.13**		-.12			-.06		.04		-.01				

	COVID-19											FLU / HIV/AIDS												CAR ACCIDENT / STORM												COVID	NON-COVID
	Beta	R2 change	Beta	R2 change	Beta	R2 change	Beta	R2 change	Average R2 change			Beta	R2 change	Beta	R2 change	Beta	R2 change	Beta	R2 change	Average R2 change				Beta	R2 change	Beta	R2 change	Beta	R2 change	Beta	R2 change	Average R2 change				Average R2 change	Average R2 change
RISK	*1a*		*1b*		*1c*		*2*					*1a*		*1b*		*1c*		*2*						*1a*		*1b*		*1c*		*2*							
Binding	**.21**	**.03**	.12	**.02**	**.07**	.02	.08	.00	*1.8%*			**.16**	**.04**	**.21**	**.04**	**.28**	**.09**	**.35**	**.11**	*7.2%*				**.12**	**.01**	07	.01	**.18**	**.02**	**.29**	**.04**	*2.1%*				*1.8%*	*4.7%*
Individualizing	.05		.08		.07		-.01					**.13**		.08		**.14**		.04						**-.15**		.13		-.07		.05							
Politics	**-.13**	**.02**	-.05	.03	-.07	**.05**	-.14	.06	*3.7%*			-.02	.01	-.14	.02	**-.15**	**.04**	-.02	.02	*2.3%*				-.09	**.04**	.03	**.04**	-.05	.01	**-.21**	.05	*3.5%*				*3.7%*	*2.9%*
Education	-.08		-.02		-.14		.00					**-.10**		.08		.05		.01						.08		02		.05		**-.18**							
Gender	.08		**.15**		.13		**.21**					-.01		.05		**.12**		-.13						**.15**		20		.06		.02							
Income	.00		-.03		-.05		.03					-.03		.00		-.10		-.04						-.06		.02		-.04		.00							
WILLING/HE	*1a*		*1b*		*1c*		*2*		*2*			*1a*		*1b*		*1c*		*2*		*2*				*1a*		*1b*		*1c*		*2*		*2*					
Binding	**-.14**	**.02**	-.02	.01	-.04	**.03**	.08	.01	.08	**.02**	*1.6%*	.00	**.02**	**.15**	**.06**	-.04	.01	.15	**.04**	.13	**.10**	*4.5%*		-.07	**.05**	.07	**.04**	-.07	**.03**	.11	.01	-.02	**.11**	*4.9%*		*1.6%*	*4.7%*
Individualizing	**.13**		.08		**.21**		-.08		.11			**.14**		**.18**		**.14**		.13		.28				.23		**26**		**.18**		.04		**33**					
Politics	.09	**.03**	-.02	.00	.03	**.03**	-.04	.03	-.04	**.05**	*2.9%*	.02	.02	-.05	.01	**.18**	.02	-.19	.03	-.20	.03	*2.1%*		.00	.00	**16**	.02	.02	.02	.00	.03	04	.05	*2.3%*		*2.9%*	*2.2%*
Education	**.16**		.04		**.17**		.15		.00			.01		.07		.06		.02		-.02				.06		.02		-.10		.13		10					
Gender	.00		-.01		-.07		.04		**.20**			-.05		.04		.05		.10		-.02				-.02		.06		.09		.06		07					
Income	.03		.01		-.01		-.01		.14			**.12**		.01		.00		.04		.09				.02		03		-.01		.07		15					

Note. Beta values represent coefficients with all variables modeled, in a two-step model with binding and individualizing values entered in step one, and demographics (politics, education, gender, and income) entered in step two. The top value in the R^2 change columns represents the binding and individualizing values variables, the bottom value represents the change from the addition of the four variables: politics, education, gender, and income. Variance Inflation Factors were computed for each of the models reported in Table 1 and are consistently below 2.00, within acceptable range. For Study 2: Willingness to Help, the first column represents volunteering, the second column represents donation. Significant (p<.05) beta values and R^2 change values indicated in bold.

General Discussion

The results of these studies, conducted in late April and early-mid May 2020 in the United States, illuminate how people perceive victims of COVID-19 compared to victims of other adversities, as well as the role of moral values and political commitments in these perceptions. On average, participants were significantly less willing to help a person or community described as having been affected by COVID-19, compared to another disease (the flu or HIV/AIDS) or non-disease damage (car accident or severe storm).

Participants considered a person affected by COVID-19 to be more contaminated and responsible for their adverse circumstances compared to a person with the flu or in a car accident; they did not, however, view the COVID-19 victim as more injured than a person in a car accident. Additionally, participants considered the risk of helping a person or a community affected by COVID-19 to be significantly greater than the risk involved in helping a person with the flu or in a car accident, or a community affected by HIV/AIDS or a severe storm.

Political orientation, demographics, and moral values were related participants' responses. Notably, left-leaning politics predicted *increased* judgments of victims of COVID-19 as responsible and contaminated in two of three studies, whereas for non-COVID-19 victims, responsibility and contamination judgments were reliably predicted by binding values, rather than politics and demographics. Likewise, judgments of victims of COVID-19 as risky to help were predicted by politics (left-leaning), gender (female), and binding values; while judgments of the risk of helping non-COVID-19 victims were reliably and more strongly predicted by, again, binding values, rather than demographics. Finally, individualizing values and increased education, predicted willingness to help victims of COVID-19. Individualizing values played a stronger role than demographics in willingness to help the *non*-COVID-19 victims.

These associations, particularly the relationships between binding values and judgments of victim responsibility and contamination, and individualizing values and willingness to help, are consistent with previous research. Binding values have been found to predict increased perceptions of victims as blameworthy, responsible, and contaminated; individualizing values have been linked with prosociality (e.g., Iyer et al., 2012; Niemi & Young, 2013, 2016; Niemi et al., 2020; Noser et al., 2015). The finding that demographic factors and politics played a greater role in judgments of COVID-19 victims than moral values indicates that participants' responses may have been based less on stable moral principles related to binding or individualizing values (e.g., help those who are suffering), and more on messages from trusted authorities or political figures. This was not the case for *non*-COVID-19 victims, where moral values mattered more than demographics and politics.

Although we observed relationships between surveyed moral values and attitudes, we did not find that people's moral values or their responses to victims were reliably altered by our attempts to increase the salience of binding or individualizing values through priming. This may reflect the nature of our outcome variables, which were mainly pertinent to people's health and safety, rather than third-party moral judgments which have been influenced by values primes in previous work (Goenka & Thomas, 2020; Mooijiman et al., 2018). The attitudes we measured may be more resistant than other-focused moral judgments to transient exogenous changes in the salience of particular moral values. Consistent with this possibility, the instance in which we observed a priming effect was in participants' third-party judgments of responsibility in Study 1a, where priming binding values increased perceptions of victim responsibility.

Practical Implications

To the extent that policymakers, charity organizations, and concerned individuals wish to persuade others to assist people affected by COVID-19, these results suggest it will be helpful to address people's safety

concerns with education, while taking into account individual differences in politics and moral values. Future work should address which interventions, such as public-service messaging or manipulations of the salience of values, are conducive to prosocial and health-related behaviors (e.g., Amin et al., 2017; Batson, 2011; Benish-Weisman, Daniel, Sneddon, & Lee, 2019; Cameron & Payne, 2011; Shariff, Willard, Andersen, & Norenzayan, 2016; Tannenbaum, Hepler, Zimmerman, Saul, Jacobs, Wilson, & Albarracín, 2015; Waytz, Dungan, & Young, 2013).

The studies presented in this article help unpack the complex dynamics associated with how people and institutions are responding to COVID-19 and its victims. First, these results make clear that people do *not* perceive those affected by COVID-19 like they do those with the flu; notably, prosocial inclinations toward COVID-19 victims are comparatively diminished. Second, people's differing moral values, politics, and demographic characteristics are associated with their reactions to victims of COVID-19; whereas reactions to non-COVID-19 victims are primarily predicted by moral values.

These findings should help make sense of the myriad downstream problems that have emerged as a result of COVID-19. For example, future research examining how people diagnosed with the disease, or who have been in close contact with someone who was diagnosed, respond to contact tracers; or, how parents make decisions about their children's schooling based on their own assessments of safety and risk, would benefit from awareness of the findings that people often attribute responsibility to people who contracted COVID-19 and regard them less as suffering people than as contagion vectors. Engaging the prosocial tendencies embodied in people's stable values, rather than their politicized perspectives on the disease, has the potential to reduce stigmatizing characterizations of victims and facilitate a cooperative collective response to the pandemic

Declarations

Consent: Written informed consent was obtained online for all participants.

Statement of Conflicting Interests: The authors have no conflicts of interests to declare.

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Figures

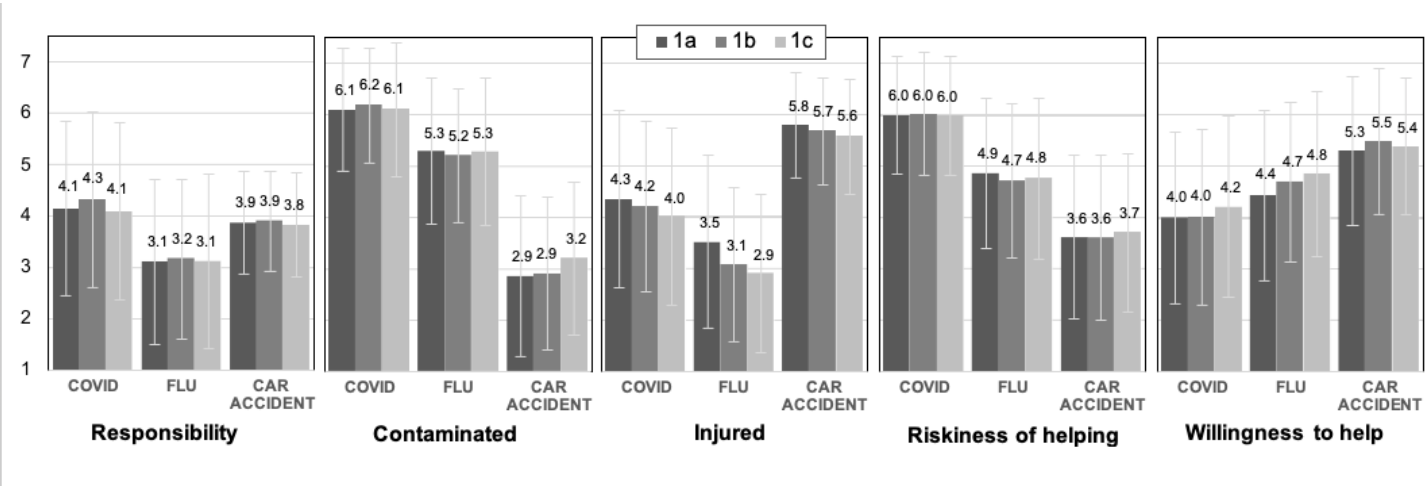

Figure 1

Means ratings of responsibility, contamination, injury, risk of helping, and willingness to help a victim of COVID-19, the seasonal flu, or a car accident in Study 1a (conducted April 24 - 27, 2020) and 1b-c (May 8 - 13, 2020).

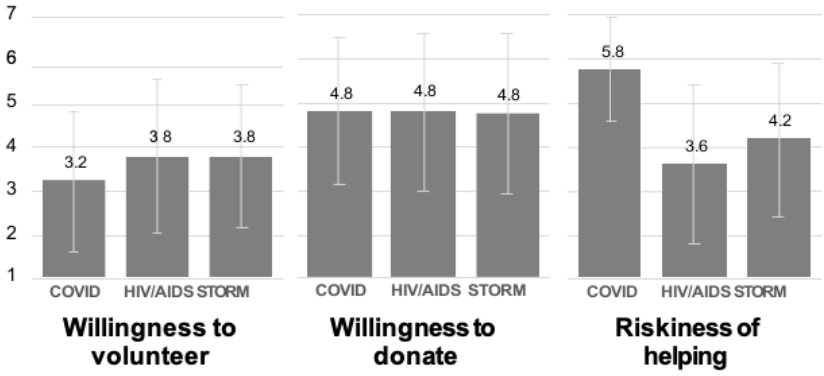

Figure 2

Average willingness to volunteer, willingness to donate, and perceived risk of helping in a community in Study 2 conducted April 24 - 27, 2020.

Supplementary Files

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