

# Evaluations of Self-Focused Versus Other-Focused Arguments for Social Distancing: An Extension of Moral Matching Effects

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## Abstract

The coronavirus pandemic has raised pressing questions about effective public health communication. Prior research has shown a persuasive advantage of arguments emphasizing a behavior's benefits for others' health compared to benefits for the recipients. We suggest that other-focused (vs. self-focused) messages function more as moral arguments and should thus be especially persuasive to people who moralize public health. Across three studies, people perceived other-focused (vs. self-focused) appeals for social distancing more as moral arguments. Further, evaluations of these messages' persuasiveness were moderated by how much the recipient already moralized public health. Other-focused arguments tended to be perceived as more persuasive than self-focused arguments primarily among people who saw public health as a moral issue, which had corresponding effects on social distancing intentions. These findings provide critical insight to health communicators and underscore the importance of understanding that a message's impact can depend on audience characteristics.

## Keywords

COVID-19, moralization, health communication, message framing, persuasion

The rapid emergence and spread of a new coronavirus (SARS-CoV-2) and its associated respiratory illness (COVID-19) prompted sweeping changes to life around the world. As Betsch (2020) notes, in the “absence of medical treatment and vaccination, the unfolding COVID-19 pandemic can only be brought under control by massive and rapid behaviour change” (p. 438). To that end, social scientists have organized to inform leaders and the public regarding best practices in these times (Van Bavel et al., 2020). One challenge to which social science is uniquely capable of contributing is enhancing compliance with *social distancing*, defined as staying at least 6 ft from other people and avoiding gathering in groups or crowded places (Centers for Disease Control and Prevention [CDC], 2020). Early adoption of such behavior can measurably reduce peak pandemic death rates (Hatchett et al., 2007).

## Self-Focused Versus Other-Focused Health Messages

Prior health message research has shown that giving “other-focused” reasons to adopt a behavior (“protect your community”) is often more persuasive than giving “self-focused” reasons (“protect yourself”). For example, people are more likely to quit smoking after reading about smoking's negative impact on their children or relationship partners versus on themselves (Lipkus et al., 2013; Yilmaz et al., 2006). Similarly,

medical professionals used more soap and hand-sanitizing gel when signage emphasized hand hygiene's importance for protecting patients than when it emphasized its importance for keeping oneself healthy (Grant & Hofmann, 2011).

Even more relevant to communication in the midst of a pandemic, arguments highlighting how an avian flu vaccine could prevent transmitting the virus to others were more persuasive than arguments focused on protecting oneself from falling ill (Kelly & Hornik, 2016). New research on coronavirus messaging also found that other-focused (vs. self-focused) appeals for an array of health behaviors (e.g., avoiding touching one's face) led to greater intentions to practice such behaviors (Jordan et al., 2020).

## A Difference in Moral Rhetoric

Although other-focused appeals for practicing health-promoting behaviors tend to be more persuasive than self-focused appeals, what ultimately differentiates these two types

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of arguments? We propose that other-focused (vs. self-focused) appeals function more as *moral* arguments. Historically, models of prosocial behavior have contended that helping others can be driven by principled moral motivations (Schwartz, 1977) and that “unethical” behaviors are those for which selfish motivations prevail (e.g., Gino et al., 2011). Laypeople also seem to construe prosocial behavior as ethical (Capraro et al., 2018; Newman & Cain, 2014; Van Lange & Liebrand, 1989). In the health domain, perceived moral obligation has been associated with people’s willingness to act in the interest of others, such as donating blood (Zuckerman & Reis, 1978), organs (Hyde & White, 2009), and bone marrow (Hyde & White, 2013). One meta-analysis found that perceived moral norms were especially predictive of intentions to engage in health-related behaviors “possessing substantial consequences for others’ welfare” (Rivis et al., 2009, p. 2991).

Thus, it seems plausible that other-focused health appeals will be interpreted as moral arguments. Indeed, moral rhetoric is often used in prosocial health communication (e.g., Hansen et al., 2018), and moral health appeals can be particularly persuasive (Ferrari & Leippe, 1992). Nevertheless, the persuasiveness of moral (vs. nonmoral) arguments can depend on how much the audience already views the issue through a moral lens. That is, consistent with other types of persuasive matching effects whereby messages are more persuasive when they appeal directly to (or “match”) the recipient’s idiosyncratic concerns (for a review, see Teeny et al., in press), the *moral matching hypothesis* maintains that moral appeals are more persuasive than nonmoral appeals primarily for people who perceive themselves to have based their attitudes on morality (Luttrell et al., 2019). In the present context, this means that if other-focused arguments indeed function as moral arguments, then they should be particularly compelling for audiences who view public health in a moral light. By contrast, other-focused arguments may be no more persuasive—or even less persuasive—than self-focused arguments for audiences who do not see public health as a moral issue.

## The Present Research

By testing how much public health moralization moderates the relative efficacy of self- versus other-focused appeals, the present work extends moral persuasion research in two ways. First, whereas Luttrell et al. (2019) focused on *counterattitudinal* persuasion in which the arguments directly challenged preexisting attitudes, the present work examines receptivity to arguments about a novel health practice for which the recommendations are largely either neutral or proattitudinal. Second, we extend moral persuasion research to the specific distinction between self-focused versus other-focused appeals.

This research also speaks to practical concerns in public health communication. Although one type of argument might tend to work better overall, prior research on matching effects in persuasion suggests that a “one-size-fits-all” approach may not be optimal (e.g., Covey, 2014). Indeed, Isler and colleagues (2020) found that for hospital patients who saw themselves as

high-risk, self-focused appeals for flu vaccination were more influential than other-focused appeals. We suggest that issue moralization is another moderator of these messaging effects.

After conducting a pilot study to assess people’s evaluations of existing social distancing arguments (see Online Supplement), we ran three experiments manipulating whether participants received a self-focused or other-focused message in favor of social distancing. These studies tested the moral matching hypothesis, examining whether evaluations of message persuasiveness and intentions to practice social distancing were moderated by the nature of the arguments and how much they viewed public health as a moral issue. Full study materials are available in the Online Supplement. Data and analysis scripts are on the Open Science Framework (<https://osf.io/fwhva/>). All studies recruited participants from the United States.

For the sake of efficiency and highlighting effects that are reliable across studies, we first report the results for the overall Moralization  $\times$  Message Type interactions for each study and then fully report the results of simple slopes analyses after combining data from all studies. However, full simple slopes analyses for each study individually are reported in the Online Supplement.

## Study 1

An initial pilot study demonstrated that people tend to perceive other-focused (vs. self-focused) arguments for practicing social distancing more as moral arguments (see Online Supplement). Thus, to formally test the moral matching hypothesis, we measured how much people saw public health in moral terms and randomly assigned them to evaluate either an other-focused or self-focused message.

## Method

### Participants

We recruited 200 participants on Amazon’s Mechanical Turk in March 2020. Nine respondents failed a simple attention check (“To ensure data quality, please choose ‘agree’ below”), leaving  $N = 191$  ( $M_{\text{age}} = 39.23$ ,  $SD = 11.89$ ; 36.1% female). Sensitivity analysis shows that this provided 80% power ( $\alpha = .05$ ) to detect a relatively small interaction ( $f^2 = .04$ ).

### Procedure

The survey opened with a brief description of COVID-19, noting that experts have been recommending social distancing in response. The CDC’s definition of social distancing was also provided. Participants were then randomly assigned to see one of two arguments supporting social distancing. See Table 1 for the messages. Participants rated how persuasive they found the argument and then reported how much they moralized public health. Following several ancillary measures, participants saw their assigned message again and indicated how much they thought it was a “moral argument.” Finally, participants reported their gender, age, and political ideology.<sup>1</sup>

**Table 1.** Self-Focused and Other-Focused Appeals for Social Distancing for all Studies.

Study	Argument Text
Study 1	
Self-focused	Think about your own health—practicing social distancing helps keep yourself healthy by reducing the chances that you contract this virus.
Other-focused	Think about everyone's health—if we all practice social distancing, the virus is less likely to spread to people who are most at risk (i.e., older adults and people with suppressed immune systems).
Study 2	
Self-focused	This is important. Practicing social distancing helps keep yourself healthy by reducing the chances that you contract this potentially dangerous virus. Think about your own health!
Other-focused	This is important. If we all practice social distancing, the virus is less likely to spread to people who are most at risk (i.e., older adults and people with suppressed immune systems). Think about everyone's health!
Combined	This is important. Practicing social distancing helps keep yourself healthy by reducing the chances that you contract this potentially dangerous virus. And if we all practice social distancing, the virus is also less likely to spread to people who are most at risk (i.e., older adults and people with suppressed immune systems). Think about your own health and everyone else's!
Study 3	
Self-focused	This is important. Other people may have the virus even if they don't currently show symptoms. By practicing social distancing, you can help prevent yourself from contracting this potentially dangerous virus. Think about your own health!
Other-focused	This is important. You may have the virus even if you don't currently show symptoms. By practicing social distancing, you can help prevent spreading this potentially dangerous virus to people who are most at risk (i.e., older adults and people with suppressed immune systems). Think about everyone's health!

## Measures

To assess persuasiveness, we simply asked: “How persuasive is this argument to you?” (1 = *not at all persuasive*, 5 = *extremely persuasive*). To assess public health moralization, participants were asked: “To what extent do you think that public health is a ‘moral issue’?” (1 = *not at all*, 5 = *extremely*). The average degree of moralization was moderately high ( $M = 3.75$ ,  $SD = .96$ ). Finally, we asked: “To what extent would you say this is a moral argument?” (1 = *not at all*, 5 = *extremely*).

## Results and Discussion

### Manipulation Check

According to independent  $t$  tests, although the other-focused message was rated slightly more persuasive ( $M = 3.91$ ,

$SD = .93$ ) than the self-focused message ( $M = 3.74$ ,  $SD = 1.00$ ), this difference was not significant,  $t(189) = -1.22$ ,  $p = .23$ ,  $d = -.18$ . As expected, however, people rated the other-focused message as more of a moral argument ( $M = 3.85$ ,  $SD = .95$ ) than the self-focused message ( $M = 2.87$ ,  $SD = 1.33$ ),  $t(189) = -5.89$ ,  $p < .001$ ,  $d = -.85$ .

Because our measure of public health moralization was presented after the manipulation, we checked whether responses differed by condition. Indeed, moralization was higher following the other-focused message ( $M = 3.91$ ,  $SD = .90$ ) than the self-focused message ( $M = 3.59$ ,  $SD = 1.00$ ),  $t(189) = -2.34$ ,  $p = .02$ ,  $d = -.34$ . This is consistent with prior work on the malleability of moralization (Luttrell et al., 2016). Because the regression models testing the Moralization  $\times$  Message Type interaction partial out any association between the two variables, this confound is of little concern and is further addressed in the next study.

### Persuasiveness

Data were submitted to a multiple regression model predicting perceived persuasiveness, entering mean-centered public health moralization and message type in the first step and the two-way interaction in the second step. Results are interpreted in the first step in which they appear. Overall, the more people moralized public health, the more persuasive they found their assigned message,  $B = .29$ ,  $t(188) = 4.16$ ,  $p < .001$ , 95% CI [.16, .43]. However, more relevant to our hypotheses, the data support the Moralization  $\times$  Message Type interaction,  $B = -.15$ ,  $t(187) = -2.10$ ,  $p = .037$ , 95% CI [-.29, -.01],  $f^2 = .02$ . The interaction was such that greater moralization predicted greater persuasiveness of the other-focused message compared to the self-focused message. Also, the other-focused message was more persuasive than the self-focused message as moralization increases.

## Study 2

We implemented several features in the next study to help clarify the effects observed in Study 1. First, because the messages in Study 1 affected public health moralization, in Study 2, we measured moralization before displaying the messages. Second, we included an initial measure of how much of a threat people saw COVID-19, allowing us to control for baseline levels of concern.<sup>2</sup> Third, we expanded the number of items used to assess message persuasiveness to enhance reliability. Fourth, we included a measure of social distancing intentions. Fifth, we added a condition in which the message makes both self-focused *and* other-focused arguments. Although in Study 1, participants who moralized public health found the other-focused appeal more compelling than the self-focused appeal, people who tended *not* to moralize public health were slightly, but not significantly, less convinced by the other-focused appeal. As a practical strategy to speak to a diverse audience, we tested whether making *both* arguments might continue to appeal to high moralizers while also delivering a relatively

compelling, multiargument message to low moralizers.<sup>3</sup> Finally, we preregistered our hypotheses, key measures, and analysis plan (<https://aspredicted.org/i2ck3.pdf>).

## Method

### Participants

Assuming a “small” moral matching interaction effect of  $f^2 = .02$  (obtained in Study 1),  $N = 399$  would provide 80% power. We increased the target sample size to 450 to account for possible exclusions. Thus, whereas we recruited 100 participants per condition in Study 1, we recruited 150 participants per condition in Study 2 for a preregistered sample size of  $N = 450$ . To avoid relying on the same recruitment platform, this study’s participants were solicited using Prolific in March 2020. We preregistered the same attention check used in the previous study. Seven respondents failed this check, leaving 443 participants ( $M_{\text{age}} = 34.23$ ,  $SD = 12.46$ ; 48.1% female).

### Procedure

The survey began by briefly describing COVID-19. Participants then rated public health as a moral issue and how much of a threat they thought COVID-19 was. Next, everyone received a brief message stating that experts recommend social distancing and describing what behaviors this entails. The key argument followed (see Table 1).

Participants then evaluated how compelling they found the message and how much they intended to practice social distancing. Following some ancillary measures, participants saw their assigned message again and indicated how much they thought it was a moral argument and how much it constituted an emotional argument. The demographic inventory came last.

### Measures

Public health moralization was measured as in Study 1 ( $M = 3.77$ ,  $SD = 1.01$ ). To assess concern about COVID-19, we adopted a measure by Everett et al. (2020): “How much of a threat do you think COVID-19 (coronavirus) is?” (1 = *not threatening at all*, 5 = *extremely threatening*;  $M = 3.97$ ,  $SD = .90$ ).

Message persuasiveness was assessed with a three-item scale adapted from prior research on persuasion (e.g., Cacioppo et al., 1983; Luttrell et al., 2017). We asked how “persuasive” and “convincing” the message was and how much it effectively made its point. All responses were on 5-point scales and were averaged to form a composite measure ( $\alpha = .89$ ). Intentions to practice social distancing were measured with a single item with a 5-point response scale anchored at *I do not intend to practice social distancing at all* and *I intend to practice extreme social distancing*.

Finally, we measured how much participants thought the message made a “moral argument” as in Study 1. To test for the possibility that perceptions of morality were driven by perceptions of emotionality (see Brady et al., 2017; Luttrell et al.,

**Table 2.** Overall Effects of Message Type (Study 2).

Message Type	Perceived as Moral Argument	Perceived as Emotional Argument	Persuasiveness
Self-focused	2.64 <sup>a</sup> (1.23)	3.34 <sup>a</sup> (1.08)	3.60 <sup>a</sup> (0.90)
Other-focused	3.54 <sup>b</sup> (1.02)	3.28 <sup>a</sup> (1.08)	3.87 <sup>b</sup> (0.91)
Combined	3.54 <sup>b</sup> (1.00) $F(2, 440) = 33.48^{**}$ $\eta^2 = .13$	3.25 <sup>a</sup> (1.09) $F(2, 440) = 0.30$ $\eta^2 = .001$	3.80 <sup>a, b</sup> (0.90) $F(2, 440) = 3.62^*$ $\eta^2 = .02$

Note. Raw means are presented with standard deviations in parentheses. Shared superscripts within each column denote nonsignificant differences ( $p > .05$ ) assessed with Tukey’s post hoc tests.

\* $p < .05$ . \*\* $p < .001$ .

2019), we also asked how much the message made an emotional argument (1 = *not at all*, 5 = *extremely*).

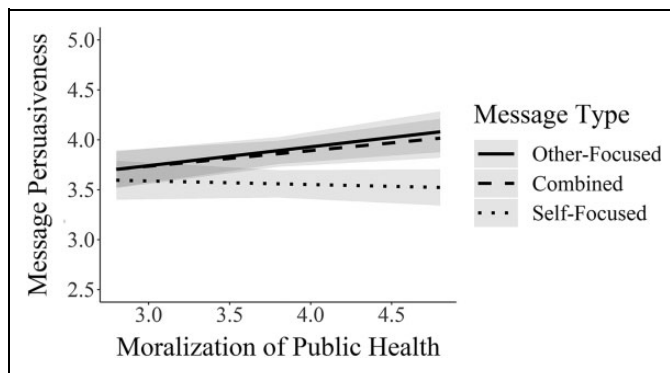
## Results and Discussion

### Manipulation Checks

We conducted a series of one-way analyses of variance (ANOVAs; Table 2), and any significant omnibus tests were further probed using Tukey’s post hoc tests. The conditions differed in how much participants saw the message as a moral argument,  $F(2, 440) = 33.48$ ,  $p < .001$ ,  $\eta^2 = .13$ . As in Study 1, the other-focused message was seen as more of a moral argument than the self-focused message,  $t(440) = -7.08$ ,  $p < .001$ ,  $d = -.83$ . The combined message was also seen as more of a moral argument than the self-focused message,  $t(440) = -7.15$ ,  $p < .001$ ,  $d = -.83$ ; however, the other-focused and combined messages did not significantly differ,  $p > .99$ . Notably, there was no evidence that the messages differed in how much they constituted emotional arguments,  $F(2, 440) = .30$ ,  $p = .74$ ,  $\eta^2 = .001$ .<sup>4</sup>

### Persuasiveness

We created two dummy-coded message variables to account for the three conditions, treating the self-focused message condition as the reference group. In the first model, mean-centered moralization of public health, the two dummy-coded message variables, and perceived threat posed by COVID-19 were entered as predictors. Overall, people found the message more persuasive the more they perceived COVID-19 as a threat,  $B = .36$ ,  $t(437) = 7.72$ ,  $p < .001$ , 95% CI [.27, .45], and the more they moralized public health,  $B = .10$ ,  $t(437) = 2.29$ ,  $p = .02$ , 95% CI [.01, .18]. Also, mirroring the results of an ANOVA (see Table 2), perceived persuasiveness was higher overall for the other-focused than for the self-focused message,  $B = .33$ ,  $t(437) = 3.41$ ,  $p < .001$ , 95% CI [.14, .53]. The combined message was also seen as more persuasive than the self-focused message,  $B = .31$ ,  $t(437) = 3.21$ ,  $p = .001$ , 95% CI [.12, .50].



**Figure 1.** Interaction between moralization of public health and message type on perceived message persuasiveness. *Note.* The x-axis is capped at one standard deviation above and below the mean for moralization. Confidence bands are 95% confidence intervals. The y-axis begins at 2.5 in order to more clearly depict the interaction pattern.

Next, we added the interactions between moralization and each dummy-coded message variable, which accounted for significantly more variance in persuasiveness,  $F(2, 435) = 3.30$ ,  $p = .038$ ,  $f^2 = .02$ , supporting an overall interaction between public health moralization and message type (Figure 1). Moralization moderated the effect of the self-focused versus other-focused message,  $B = .22$ ,  $t(435) = 2.37$ ,  $p = .02$ , 95% CI [.04, .41] as well as the effect of self-focused versus combined message,  $B = .19$ ,  $t(435) = 1.99$ ,  $p = .047$ , 95% CI [.003, .381]. These interactions were such that greater moralization was associated with more persuasiveness of the other-focused and combined messages compared to the self-focused message. Also, the other-focused was more persuasive than the self-focused message as public health moralization increased. Similarly, the combined message was more persuasive than the self-focused message as moralization increased (see Online Supplement).

### Intentions

As noted in the preregistration, it seemed possible that the sociopolitical environment at the time may have constrained social distancing intentions, limiting opportunities to observe message effects. Social distancing arguments had also been widely disseminated throughout the media environment and thus may already have had their persuasive effect. That is, although people could reflect on how compelling they found a particular argument when revisiting it, their current intentions to practice social distancing may already have been shaped by prior exposure to these arguments. Indeed, the hypothesized direct Moralization  $\times$  Message interactions on intentions were not significant,  $ps > .49$ , although the pattern was consistent with the proposed matching effect. We did, however, examine a potential indirect effect on intentions via message persuasiveness in an exploratory analysis. Results of a bootstrapping procedure with 10,000 iterations show that the Moralization  $\times$  Message (self-focus vs. other-focus) interaction was associated with social distancing intentions via message persuasiveness,

$B = .10$ ,  $p = .02$ , 95% CI [.02, .19]. Similarly, the Moralization  $\times$  Message (self-focus vs. combined) interaction was associated with intentions via persuasiveness,  $B = .09$ ,  $p = .046$ , 95% CI [.002, .178].

## Study 3

In Study 3, we attempted to control for a potential confound in the previous studies' materials. Whereas our self-focused messages argued that social distancing could *keep* yourself healthy, the other-focused messages argued that it could *prevent* others from getting sick. Because promotion- and prevention-focused messages can have distinct outcomes (Ludolph & Schulz, 2015), it is possible that our findings had more to do with this variable than the self- versus other focus per se. In addition, whereas our self-focused messages emphasized what one could do themselves, the other-focused messages pointed to the importance of a society *collectively* taking some action. Although there is no theory to suggest that these particular factors should interact with the perceived moral basis of the issue, to definitively rule these confounds out, in Study 3, we deconfounded the materials. We also dropped the combined message condition because it did not differ from the other-focused message in Study 2.

## Method

### Participants

Both of our prior studies found the predicted interaction effect on persuasiveness with a small effect size ( $f^2 = .02$ ). Because  $N = 399$  would provide 80% power to detect this, we increased the target sample such that we recruited 200 participants per condition. Participants were recruited via Prolific in June 2020, and 17 people failed the same attention check used in the previous studies, leaving  $N = 383$  ( $M_{\text{age}} = 35.43$ ,  $SD = 12.80$ ; 50.65% female).

### Procedure

The survey was identical to Study 2 except for dropping the "combined" message condition and revising the message text. In both conditions, the message began as in Study 2 but noted that the CDC continues to recommend social distancing "even as some states have been opening up again." The message then displayed the critical arguments (see Table 1). Notably, both self- and other-focused arguments used a prevention frame and highlighted the consequences of the recipient's own actions. All measures were the same as Study 2.

## Results

### Manipulation Checks

Participants again perceived the other-focused message as more of a moral argument ( $M = 3.79$ ,  $SD = .97$ ) than the self-focused message ( $M = 3.13$ ,  $SD = 1.25$ ),  $t(381) = -5.79$ ,  $p < .001$ ,  $d = -.59$ . The messages did not significantly differ in perceived emotional content  $p = .69$ .

## Persuasiveness

Data were analyzed as in Study 1 but with the addition of the perceived threat covariate from Study 2. Results of the main effects model show that overall, people found the message more persuasive, the more they perceived COVID-19 as a threat,  $B = .37$ ,  $t(379) = 8.41$ ,  $p < .001$ , 95% CI [.28, .45] and the more they moralized public health,  $B = .18$ ,  $t(379) = 4.37$ ,  $p < .001$ , 95% CI [.10, .25]. There was no main effect of message type,  $p = .84$ . However, the data supported a marginally significant Moralization  $\times$  Message Type interaction,  $B = -.07$ ,  $t(378) = -1.86$ ,  $p = .06$ , 95% CI [-.14, .004],  $f^2 = .01$ . The interaction was again such that greater moralization predicted greater persuasiveness of the other-focused message compared to the self-focused message. Also, the other-focused message was more persuasive than the self-focused message as moralization increased.

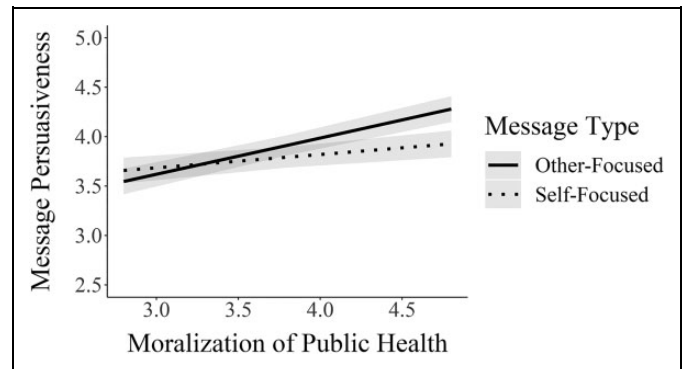
## Intentions

Data were analyzed again with the same models, this time predicting intentions to engage in social distancing. Results supported the predicted interaction between moralization and message type,  $B = -.08$ ,  $t(378) = -2.30$ ,  $p = .02$ , 95% CI [-.15, -.01],  $f^2 = .01$ , which was in the same pattern as the results for perceived persuasiveness. Similar to Study 2, we found a marginally significant indirect effect of the Message Type  $\times$  Moralization interaction on intentions via perceived persuasiveness,  $B = -.03$ , 95% CI [-.06, .001],  $p = .06$ .

## Combined Analysis

Across three studies with some variations in samples and materials, we found consistent evidence of a hypothesized interaction between public health moralization and message type on persuasion outcomes. However, the effects varied in strength and in their corresponding patterns of simple effects. To maximize statistical power and clarify the patterns of results, we combined the data for the self-focused versus other-focused messages from all the three studies to test the effects across all available data ( $N = 863$ ). We report a summary of these results here (see the Online Supplement for full details).

First, we found no evidence that the Moralization  $\times$  Message Type interaction on persuasiveness differed across studies,  $F(2, 850) = .46$ ,  $p = .63$ . Consistent with prior research, people rated the other-focused messages as more persuasive than the self-focused messages,  $t(861) = 1.97$ ,  $p = .05$ ,  $d = .13$ . More relevant to our hypotheses, however, the Moralization  $\times$  Message Type interaction was highly reliable,  $B = -.12$ ,  $t(856) = -4.00$ ,  $p < .001$ , 95% CI [-.17, -.06],  $f^2 = .02$  (see Figure 2). We decomposed this and all other interactions using simple slopes analysis (Aiken & West, 1991). Greater public health moralization was associated with perceiving the other-focused message as more persuasive,  $B = .37$ ,  $t(856) = 8.99$ ,  $p < .001$ , 95% CI [.29, .45], but this was less pronounced for perceived persuasiveness of the self-



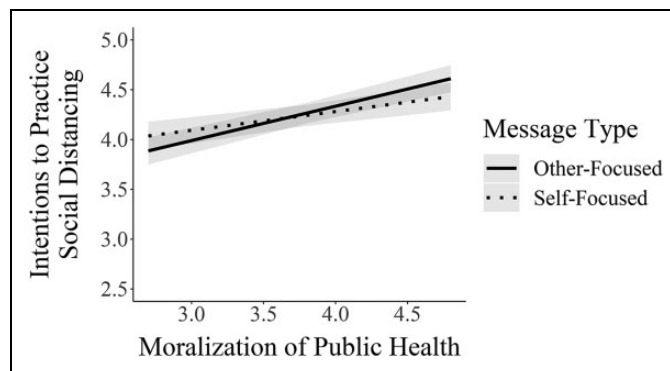
**Figure 2.** Interaction between moralization of public health and message type on perceived message persuasiveness (across three studies). Note. The x-axis is capped at one standard deviation above and below the mean for moralization. Confidence bands are 95% confidence intervals. The y-axis begins at 2.5 in order to more clearly depict the interaction pattern.

focused message,  $B = .13$ ,  $t(856) = 3.29$ ,  $p = .001$ , 95% CI [.05, .22]. Among people who moralized public health relatively little (1  $SD$  below the mean), there was no evidence that the messages were seen as differentially persuasive,  $B = .06$ ,  $t(856) = 1.47$ ,  $p = .14$ , 95% CI [-.02, .14]. However, among people who moralized public health relatively highly (1  $SD$  above the mean), the other-focused message was evaluated as more persuasive than the self-focused message,  $B = -.17$ ,  $t(856) = -4.20$ ,  $p < .001$ , 95% CI [-.26, -.09].

We also tested the effects on behavioral intentions across Studies 2 and 3 and again found no evidence that the Moralization  $\times$  Message Type interaction differed between studies,  $B = -.03$ ,  $t(663) = -.90$ ,  $p = .37$ . Across both studies, the interaction was reliable,  $B = -.08$ ,  $t(666) = -2.51$ ,  $p = .01$ , 95% CI [-.14, -.02] (Figure 3). Greater public health moralization was associated with stronger social distancing intentions after reading the other-focused message,  $B = .35$ ,  $t(666) = 7.90$ ,  $p < .001$ , 95% CI [.26, .43], but this was less pronounced for intentions following the self-focused message,  $B = .19$ ,  $t(666) = 4.21$ ,  $p < .001$ , 95% CI [.10, .28]. As with persuasiveness, we also found no evidence for a difference between messages among people who moralized public health relatively little (1  $SD$  below the mean),  $B = .07$ ,  $t(666) = 1.57$ ,  $p = .12$ , 95% CI [-.02, .16]. However, among people who moralized public health relatively highly (1  $SD$  above the mean), the other-focused message resulted in stronger intentions to practice social distancing than the self-focused message,  $B = -.09$ ,  $t(666) = -1.98$ ,  $p = .048$ , 95% CI [-.18, .00]. In addition, the indirect effect of the Moralization  $\times$  Message Type interaction on intentions via perceived persuasiveness was significant,  $B = -.06$ , 95% CI [-.09, -.03],  $p = .001$ .

## General Discussion

Across a pilot and three studies, other-focused messages were perceived more as *moral* arguments compared to self-focused messages. As such, consistent with the moral matching



**Figure 3.** Interaction between moralization of public health and message type on social distancing intentions (Studies 2 and 3). *Note.* The x-axis is capped at one standard deviation above and below the mean for moralization. Confidence bands are 95% confidence intervals. The y-axis begins at 2.5 in order to more clearly depict the interaction pattern.

hypothesis, message persuasiveness depended on how much the audience saw public health as a moral issue. Specifically, the more people moralize public health, the more compelling they find the other-focused arguments and the more they intend to practice the advocated behaviors. These relationships are attenuated for self-focused arguments. Likewise, the previously documented superiority of other-focused messages holds mostly for people who moralize public health because these messages appeal more directly to that audience's tendency to see the issue in moral terms. Among people who do not, there was no evidence that one type of message is more compelling than the other.

These studies provide evidence to guide messaging in the midst of the present coronavirus pandemic and future health crises that require public action. Our data, in concert with previous work, suggest that politicians and other health communicators should emphasize the capacity for a behavior to protect other people's health rather than to protect oneself. Although we do not find an especially strong difference between messages in the aggregate, our observed interactions were such that other-focused appeals were either more persuasive than self-focused appeals (for those who tend to moralize public health) or did not significantly differ from self-focused appeals (for those who do not tend to moralize public health). Importantly, even among people who do not view public health as a particularly moral issue, the other-focused message did not significantly *underperform* relative to the self-focused one. Nevertheless, we caution against overinterpreting this null effect because the pattern of our interaction suggests that people who do not moralize public health may be more persuaded by the self-focused message. Our samples just did not contain enough such people. We presume that public health as an issue (vs. many other issues) trends toward the higher end of the moral continuum on average, but careful testing of a communicator's target audience will be useful to identify their tendency to think of public health as a moral issue, which could help communicators

tailor their message accordingly. In addition, there may be other factors that would make a self-focused message more persuasive, such as whether a person is at very high risk (e.g., Isler et al., 2020).

## Limitations

One limitation of these studies is our focus on participants' evaluations of message persuasiveness as the key outcome. Although this is relatively common in messaging research, subjective evaluations of a message may not necessarily translate to actual behavior change. However, because the results of our overall self-other message comparisons were consistent with prior research assessing behavioral outcomes (e.g., Grant & Hofmann, 2011; Lipkus et al., 2013), and we also observed a matching effect on a measure of behavioral intentions, we are more confident that our studies capture actual differences in message persuasiveness.

Finally, we note that our studies relied on samples from the United States, but of course, health messaging is an area of global importance. We suspect that people in other parts of the world will similarly interpret other-focused (vs. self-focused) messages more as moral appeals. In fact, because independence and self-reliance tend to be important values in the United States, our samples provide an especially strong test of our hypothesis. However, future work should examine the generalizability of our findings to other cultural contexts.

## Conclusions

In sum, these studies suggest that in the midst of a global pandemic, messages highlighting the benefits of social distancing for the health and well-being of others may be more influential than messages highlighting social distancing's benefits for one's own health, but particularly for audiences who view public health as a relatively moral issue. Future research could continue to test these effects for other health campaigns for behaviors such as smoking and vaccination. These data underscore the importance of considering the use of moral arguments in health communication and the utility of considering how such arguments may resonate differently with different audiences.

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**Supplemental Material**

The supplemental material is available in the online version of the article.

**Notes**

1. In all studies, more liberal participants moralized public health more, but moralization was unrelated to age or gender. Across studies, neither ideology, age, nor gender moderated the predicted Moralization  $\times$  Message (self-focus vs. other-focus) interaction on persuasiveness (see the Online Supplement).
2. The statistical significance of all effects is the same when threat is omitted as a covariate.
3. Although they did not examine moderators, other studies on self-focused versus other-focused appeals have included a similar “combined” condition. The results are mixed; Bonafide and Venable (2015) found that combining arguments was maximally effective, but Jordan et al. (2020) found no evidence that the combined appeal differed from the other-focused appeal.
4. Moving the public health moralization measure to the beginning of the survey succeeded in preventing significant between-group differences in moralization,  $F(2, 439) = 1.74, p = .18$  (Study 2);  $t(381) = -.45, p = .66$  (Study 3).

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