Getting Conservatives and Liberals to Agree on the COVID-19 Threat

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Abstract

Throughout the COVID-19 pandemic, political ideology has been perhaps the strongest predictor of consumers' perceptions of the coronavirus's threat. This article demonstrates that differences between conservatives' and liberals' responses to COVID-19 are mitigated when people perceive the virus itself to have agency. We propose that conservatives are generally more sensitive to threats that are relatively high (vs. low) in agency. Consequently, we find that greater perceived agency of the coronavirus increases its perceived threat among conservatives but not liberals, and that this interaction is driven by differences in the tendency to attribute responsibility to agential entities. We also explore the effect of these malleable threat perceptions on downstream consequences related to the pandemic, including planned in-person consumption frequency. This research offers public health officials, policymakers, and firms insight into how to communicate more effectively about the pandemic, and contributes theoretically to the literature on political ideology and threat sensitivity.

Key Words

COVID-19, coronavirus, political ideology, threat, agency

It is important for public health officials, policymakers, and firms to understand consumers' perceptions of the threat posed by COVID-19 (as well as other macro-level threats), as these perceptions affect consumers' efforts to fight its spread as well as their consumption behaviors. In the United States, perhaps the greatest predictor of consumers' threat perceptions of COVID-19 has been political ideology (Barrios and Hochberg 2020; Gollwitzer et al. 2020). Compared to liberals, conservatives tend to believe the disease poses less of a risk and have been more willing to go against stay-at-home orders or engage in in-person consumption (Painter and Qiu 2020). Interestingly, prior research on the psychology of political ideology predicts that conservatives should be relatively *more* sensitive to threats (Lilienfeld and Latzman 2014; Crawford 2017; Jost 2017). The present article investigates why conservatives and liberals differ in their threat perceptions of, and responses during, the COVID-19 pandemic and why these perceptions do not necessarily follow from those documented in previous work.

We propose that individuals' perceptions about whether the coronavirus has agency (i.e., ability to control its own actions) moderates the effect of political ideology on threat perceptions of COVID-19. Specifically, we show that when people perceive the virus to have agency, conservatives' threat perceptions of COVID-19 increase such that both ideologies come to better align in their responses to it. We demonstrate that this is driven by conservatives' tendency (relative to liberals) to make sense of negative outcomes by causally attributing them more to forces that seemingly possess free will (i.e., agential factors) versus those that seemingly do not possess free will (i.e., deterministic factors). We also explore the downstream consequences of these malleable threat perceptions, including beliefs about the likelihood of a second wave, willingness to adopt protective measures, planned in-person consumption frequency, and beliefs that society is overreacting.

POLITICAL IDEOLOGY AND THREAT

We define a threat as anything with the potential to inflict harm (Blascovich and Tomaka 1996; Crawford 2017). Previous research suggests that conservatives are generally more sensitive to threats than liberals (Lilienfeld and Latzman 2014; Crawford 2017; Jost 2017). Of course, some issues do not follow this pattern. Liberals are more sensitive to climate change (McCright and Dunlop 2014) and now a pandemic (Barrios and Hochberg 2020). While these examples might partly be explained by conservatives' increased concerns about the economic costs involved in addressing these threats (Hornsey, Harris, and Fielding 2018), such concerns cannot explain conservatives' support for economically costly responses

to other threats (e.g., going to war; Malka and Lelkes 2010). Reconciling this apparent contradiction in conservatives' and liberals' relative sensitivity across different threats, we propose a novel moderator of the effect of ideology on threat perceptions: the extent to which individuals perceive the threatening entity (e.g., the coronavirus) to have agency.

The Role of Perceived Agency Across Political Ideologies

Agency refers to the ability to control one's own actions and choices (Bandura 1989). Notably, independent from how much agency an entity objectively possesses, the degree of agency that individuals assign to an entity (i.e., perceived agency) can affect their judgments of it. For example, customers' perceptions of employees' agency during firm-customer interactions influence their satisfaction and purchase intentions (Packard, Moore, and McFerran 2018). Even the perceived agency of non-human entities, such as products or brands, influences consumers' evaluations (Aggarwal and McGill 2007). Prior research has demonstrated that the perceived agency of an entity is malleable, but also that this perceived agency influences different groups of consumers to varying degrees (Puzakova, Kwak, and Rocereto 2013). In this research, we propose that political ideology is one factor that determines whether perceived agency influences judgments, specifically in the domain of threat detection.

A large body of research on the psychological foundations of political ideology suggests that, compared to liberals, conservatives have a greater tendency to view free will and self-determination as the primary drivers of outcomes in life (Feather 1985; Ordabayeva and Fernandes 2018). Such a view reduces uncertainty and suggests greater predictability throughout life, which is a fundamental value that conservatives hold (Jost 2017). Correspondingly, conservatives are more likely to endorse Protestant work ethic beliefs (Furnham 1987), exercise greater self-control in pursuit of long-term goals (Clarkson et al. 2015), and react against consumer regulations perceived as restricting their freedom (Irmak, Murdock, and Kanuri 2020). This tendency to view a strong correspondence between one's free will and one's (mis)fortunes extends to conservatives' judgments of others (Skitka et al. 2002). For instance, conservative managers tend to focus more on outcomes when evaluating the performance of their employees since they believe these outcomes to be perfectly reflective of employees' efforts, whereas liberal managers tend to focus more on the processes that employees enact since they recognize that uncontrollable forces can influence final outcomes (Tetlock et al. 2013). Taken together, these findings suggest that political ideology influences the elements that individuals focus on when interpreting the cause of an outcome;

while conservatives are more likely to explain outcomes as a function of highly agential forces (e.g., free will), liberals are more likely to focus on deterministic explanations (i.e., those unrelated to free will, such as chance alone).

Perceived Agency and Attribution of Responsibility During the COVID-19 Pandemic

Of particular interest in the present research is how conservatives and liberals interpret the cause of, and thus assign blame for, any negative outcomes related to the COVID-19 pandemic. When it comes to negative outcomes in a societal context, conservatives' tendency to adopt agential (vs. deterministic or situational) causal attributions manifests quite powerfully (Skitka et al. 2002). We propose that the difference between liberals' and conservatives' likelihood to attribute responsibility for negative outcomes to agential forces influences their responses during the pandemic.

A number of salient forces varying in perceived agency are linked to the pandemic. Politicians, media organizations, and the American public are just some high agency entities that could likely serve as a source of blame for an array of negative consequences associated with COVID-19 (e.g., health issues, financial struggles, disruptions to normal life, etc.). In contrast, the coronavirus itself is a relatively low agency entity, yet one that could also potentially be the subject of blame for any negative consequences. We propose that, compared to liberals, conservatives are less sensitive to the threat of the low agency virus because they blame it less for any negative consequences that they and their communities are faced with (and instead likely place greater blame on high agency entities involved).

It follows that an increase in the extent to which the virus itself is seen as possessing agency should increase conservatives' perceptions of the virus's threat because they can now attribute greater responsibility for negative outcomes to this agent. Perceived agency should not significantly increase the virus's perceived threat among liberals given that they form threat assessments based relatively more on deterministic factors. Overall, we predict that perceived agency of the coronavirus moderates the effect of political ideology on threat perceptions; when the virus is seen as possessing greater agency, conservatives will place more blame on the virus itself, ultimately aligning perceptions of the virus's threat across ideologies. Formally, we hypothesize:

H1: Relative to liberals, conservatives perceive COVID-19 to be less threatening.

H2: The effect in H1 is driven by conservatives' tendency, relative to liberals, to attribute less responsibility for the pandemic's negative impact to the virus itself.

H3: The effect in H1 will be attenuated as individuals perceive the coronavirus to have greater agency.

OVERVIEW OF STUDIES

Throughout our studies, we focus on the *social* dimension of ideology. Recent work distinguishes between *social* ideology and *economic/fiscal* ideology, with social ideology often being more influential in the present political age (Carmines, Ensely, and Wagner 2012) and corresponding more directly to threat sensitivity (Crawford 2017). Analyses using participants' fiscal ideology and broader ideology largely support the same hypotheses (see supplemental documents).

We test our predictions across three studies sampling American residents during May 2020, at which time non-essential businesses were closed in most states and the media had been covering the pandemic's spread for several months. Study 1 documents the interaction between social ideology and perceived agency of the virus on threat perceptions and key downstream behaviors relevant to the pandemic. We also show that the difference in responses between ideologies is mediated by attributions of responsibility towards the virus itself. Study 2 demonstrates that a simple message framing intervention can increase perceptions of the virus's agency, which attenuates the differences between liberals' and conservatives' threat perceptions and beliefs about whether society is overreacting to COVID-19. Finally, in the General Discussion we report a study that generalizes the relationship between social ideology and sensitivity to a variety of high agency (vs. low agency) threats unrelated to COVID-19 in order to provide broader support for our theoretical framework that conservatives, relative to liberals, are more sensitive to high agency threats and to spark greater discussion about the role of perceived agency in responses to societal threats.

STUDY 1

The goal of study 1 was twofold. First, we test whether perceived agency of the coronavirus moderates the effect of social ideology on perceived threat of COVID-19, as well as key downstream consumption intentions, including planned frequency of in-person consumption activities. Second, we explore the process underlying the interaction between ideology and perceived agency of the virus. If conservatives indeed differ from liberals in their tendency to attribute negative outcomes to salient agential factors, then increased perceptions of the virus's agency should lead conservatives (but not liberals) to assign more blame to the virus itself and ultimately perceive it as a greater threat.

Method

Three-hundred participants ($M_{\text{age}} = 39.7$; 52% male) recruited from Amazon's Mechanical Turk (MTurk) completed this study about perceptions of COVID-19. Participants first reported their perceptions of the virus's agency via two measures (1 = Not at all; 7 = Very much: "To what extent does the coronavirus have a mind of its own?" and "To what extent does the coronavirus have a motive," combined into a composite ($r = .748$). Next, participants responded to the following questions: "How likely do you believe it is that a second wave of COVID-19 cases will occur?" (1 = Not at all likely; 7 = Extremely likely) and "How much of a threat would a second wave of COVID-19 cases be if it occurred?" (1 = Not at all a threat; 7 = A massive threat). Then, participants reported how frequently they plan to engage in each of six in-person consumption behaviors (1 = Not at all frequently; 7 = Very frequently): "Get a haircut"; "Meet friends at the bar/café"; "Go out to dinner"; "Go to see a movie"; "See a live performance (sports, theater, etc.)"; and "Shop for clothing," averaged into a composite ($\alpha = .93$). Participants then indicated how much they think "the virus itself" is responsible for how their life has been affected (1 = Not at all responsible; 7 = Very responsible), and how much they blame "the virus itself" for any negative changes they have experienced over the past few months (1 = Do not blame at all; 7 = Blame very much). We took the average of these two items ($r = .71$) to create our main process measure. We also assessed participants' perceived responsibility and blame towards "forced economic shutdowns" using the same scales ($r = .73$) to create a measure of blame towards one high-agency entity (i.e., the policymakers behind the shutdown) that seemed very salient at the time the study was run. Next, participants reported their social ideology (after reverse coding: 1 = Very socially liberal, 7 = Very socially conservative; Miller and Seligman 1999).¹ Finally, participants reported their home state, income, education level, age, and gender.

Results and Discussion

Perceived Likelihood and Threat of a Second Wave. First, we regressed perceived likelihood of a second wave on social ideology ($M = 3.36$, $SD = 1.84$), perceived agency ($M = 3.21$, $SD = 2.07$), and their interaction (after mean-centering). The analysis revealed a main effect of social ideology ($b = -.170$, $t(296) = -4.05$, $p < .001$), supporting H1, a main effect of perceived agency ($b = .092$, $t(296) = 2.48$, $p = .014$), and a significant interaction ($b = .044$,

¹ See supplemental documents for correlations between the key measures, as well as regression analyses using the fiscal and broad ideology measures.

$t(296) = 2.19, p = .029$, figure 1), supporting H3. Floodlight analysis revealed that among individuals who perceived the virus to have low agency (below 4.74 on the scale; 72% of participants), social conservatives perceived a lower likelihood of a second wave of the pandemic occurring than liberals. However, among individuals who perceived the virus to have high agency (above 4.74 on the scale; 28% of participants), the two ideologies perceived an equal likelihood of a second wave. Slicing this interaction the other way showed that the attenuation of differences in perceived likelihood of a second wave at high levels of perceived agency is driven by an increase among relatively conservative participants (above 2.95 on the social ideology measure; 61% of participants). A very similar pattern of results emerged for perceived threat of a second wave (see supplemental documents). The age, gender, income, education, and home-state covariates did not notably change any findings in this or any subsequent studies and are not detailed further. However, we do discuss the potential role of individual differences in the General Discussion.

Planned In-person Consumption. Regression revealed no effect of social ideology ($b = .036, t(296) = 0.83, p = .410$), a main effect of perceived agency ($b = .233, t(296) = 5.96, p < .001$), and the predicted interaction ($b = -.082, t(296) = -3.92, p < .001$). Floodlight analysis revealed that among individuals who perceived the virus to have low agency (below 2.55 on the scale; 47% of participants), social conservatives reported greater planned in-person consumption than liberals. However, among individuals who perceived the virus to have high agency (above 5.07 on the scale; 22% of participants), the effect reversed such that conservatives actually reported lower planned in-person consumption than liberals.

Mediation by Relative Blame Towards Virus. A regression on blame towards the virus revealed a negative effect of social ideology ($b = -.265, t(296) = -5.27, p < .001$), a positive effect of perceived agency ($b = .194, t(296) = 4.34, p < .001$), and the predicted interaction ($b = .067, t(296) = 2.82, p = .005$).

Supporting H2, a test for moderated mediation (PROCESS Model 8; Hayes 2017) revealed that, when perceived agency of the virus was low, social conservatives (vs. liberals) placed less blame on the virus, and this led them to believe a second wave of the pandemic was less likely (e.g., at the mean perceived agency value of 3.21; indirect effect: $b = -.092, SE = .023, 95\% CI: -.140, -.051$). However, when perceived agency of the virus was high (above 5.45 on the scale; 15% of participants), the conditional indirect effect of social ideology on likelihood of a second wave through blame towards the virus was mitigated and the confidence interval included zero (index of moderated mediation: $b = .023, SE = .009, 95\% CI: .007, .040$). The same pattern held for perceptions of a second wave's degree of threat and

planned in-person consumption (see supplemental documents). Additionally, when either controlling for blame towards forced economic shutdowns (i.e., the actions of an agential force salient at the time the studies were run) or instead using a difference score of blame towards the virus and the shutdowns as the mediator, a similar pattern resulted (see supplemental documents).

Discussion. The results of study 1 demonstrate that social ideology and perceptions of the virus's agency interact to determine consumers' threat perceptions of COVID-19.

Specifically, when consumers perceive the virus to have low agency (as most participants did), social conservatives (vs. liberals) believed a second wave of the pandemic was less likely and would be less threatening. However, these differences were attenuated among individuals who perceived the virus to have high agency. Furthermore, we illustrate that this occurs because greater perceptions of agency enable conservatives to blame the virus itself for negative outcomes associated with the pandemic. In study 2, we manipulate perceived agency of the coronavirus to bolster our causal evidence while documenting an ecologically valid message framing practice that can attenuate the difference in perceived threat of COVID-19 between ideologies.

STUDY 2

The main goal of study 2 is to test whether a simple manipulation of how COVID-19 is portrayed in an informational message (that public health officials can implement) could mitigate the effect of ideology on responses to the virus. Another goal of study 2 is to generalize our findings to downstream consequences with public health implications, such as intentions to engage in protective behaviors (e.g., wearing a mask) and belief that society is overreacting to the disease.

Participants, Design and Procedure

Three-hundred MTurk participants ($M_{\text{age}} = 36.9$; 39% female) completed the study. The study employed a 2 (agency: control vs. high) by continuous (social ideology) between-subjects design.

Participants first read a brief description of the virus, which served as the agency manipulation (see supplemental documents). The description in the high agency condition stated that the virus “seeks to infect any human it comes in contact with” and that it has a “strong motive to use humans as a means to spread.” The description in the control condition stated that the virus “can infect any human it comes in contact with” and that it “is spread as

more humans contract it.” Participants then answered the following three measures of perceived threat, combined into a composite ($\alpha = .86$): “How big of a threat to society is COVID-19?” (1 = Somewhat of a threat; 7 = A massive threat); To what extent are you willing to take precautionary measures to prevent the spread of COVID-19? (1 = Not at all; 7 = Very much); and “To what extent do you think you should follow the recommended behaviors to prevent the spread of COVID-19?” (1 = Not at all; 7 = Very much).

Next, participants indicated their willingness (1 = Not willing at all; 7 = Extremely willing) to help mitigate the spread of COVID-19 by: “Wearing a face mask;” “Not leaving your home unless it is absolutely necessary;” and “Maintaining at least 6 feet of distance from all individuals who are not in your household” ($\alpha = .80$).

Participants also rated their agreement (1 = Completely disagree; 7 = Completely agree) with statements about society’s reaction to the virus: “People are overreacting to the coronavirus;” “The measures being taken to address the coronavirus are inflicting more damage to the country than the virus itself;” and “The media is intentionally making the coronavirus seem more dangerous than it actually is” ($\alpha = .93$). Next, they responded to a manipulation check item (“To what extent does the coronavirus have a motive” (1 = Not at all; 7 = Very much)), and the ideology and demographics measures from study 1.

Results and Discussion

Manipulation Check. Regression revealed that the agency manipulation ($M = 4.37$, $SD = 2.00$) increased perceptions of the virus’s agency compared to the control condition ($M = 3.79$, $SD = 2.22$; $b = .582$, $t(296) = 2.38$, $p = .018$). Neither social ideology ($b = -.030$, $t(296) = -.43$, $p = .671$) nor the interaction ($b = .046$, $t(296) = .33$, $p = .740$) impacted the manipulation check.

Perceived Threat. We regressed perceived threat on agency (high = 1; control = 0), social ideology (mean-centered), and their interaction. The analysis revealed no effect of agency ($b = -.004$, $t(296) = .03$, $p = .974$), a significant effect of social ideology ($b = -.208$, $t(296) = -6.15$, $p < .001$), and, supporting H3, a significant interaction ($b = .175$, $t(296) = 2.58$, $p = .010$). Simple slope analysis revealed that in the control condition, social conservatives (vs. liberals) reported significantly lower threat perceptions ($b = -.295$, $t(296) = -6.06$, $p < .001$). In the high agency condition, while social conservatism still corresponded with lower threat perceptions, the difference between ideologies ($b = -.121$, $t(296) = -2.57$, $p = .011$) was significantly reduced. Slicing the interaction another way, floodlight analysis revealed that this attenuated difference between ideologies was driven by the agency manipulation

significantly increasing threat perceptions among social conservatives (above 5.11 on the social ideology scale; 10% of participants).

Willingness to Take Protective Measures. Regression revealed no effect of agency ($b = .094$, $t(296) = .73$, $p = .463$), a significant effect of social ideology ($b = -.181$, $t(296) = -4.96$, $p < .001$), and a directional interaction ($b = .118$, $t(296) = 1.62$, $p = .107$). While not reaching significance, floodlight analysis revealed that the effect of the agency manipulation marginally increased ($p < .10$) social conservatives' (above 4.68 on the social ideology scale; 22% of participants) willingness to take protective measures.

Beliefs about Society's Reaction. Regression revealed no effect of agency ($b = -.032$, $t(296) = -.14$, $p = .888$), a significant effect of social ideology ($b = .219$, $t(296) = 3.35$, $p < .001$), and the predicted interaction ($b = -.368$, $t(296) = -2.82$, $p = .005$). Simple slope analysis revealed that in the control condition, social conservatives believed that society is overreacting to a greater degree than social liberals ($b = .403$, $t(296) = 4.28$, $p < .001$), whereas the effect of social ideology was eliminated in the high agency condition ($b = .035$, $t(296) = .39$, $p = .698$; figure 2).

Discussion. These findings demonstrate that communications framing the coronavirus as having agency attenuated the effect of social ideology on threat perceptions, eliminated the effect of social ideology on beliefs that society is overreacting and also marginally increased social conservatives' willingness to take recommended protective measures. We acknowledge that the agency manipulation significantly reduced the relationship between social conservatism and lower threat perceptions, but did not totally eliminate it. Given the short format of our manipulation, we believe more powerful interventions could be established and discuss this further below.

GENERAL DISCUSSION

Two studies document a key moderator, perceived agency of the threat, that helps explain the differing responses among liberals and conservatives to COVID-19. We demonstrate that conservatives are less likely to assign causal attribution for the pandemic's consequences to the virus itself. Notably, we demonstrate that portraying the novel coronavirus as possessing agency mitigates differences between ideologies in threat perceptions of COVID-19 and key downstream variables by ultimately increasing conservatives' inclination to place blame on the virus itself for any negative outcomes.

Practical Contributions

Our findings offer powerful insights into how policymakers can adjust their communications about the virus in order to gain more support for recommended protective measures among certain segments. For example, federal and state health officials can purposefully use language when explaining the coronavirus's spread in press briefings or written articles that increases the virus's perceived agency, as opposed to depicting its spread as a random process. Our results suggest this would increase perceptions of the virus's threat among conservatives and potentially increase the likelihood that some of these individuals adopt protective measures, while having no adverse effects on the behaviors of liberals. Our manipulation in study 2 provides a starting point for exact language to use, including verbs and descriptions that give the virus a sense of human-like action (e.g., "seeks," "has a strong motive") and phrases that make it seem like a palpable enemy with a mission against us (e.g., "seeks to infect any human it comes into contact with"). Some prior work provides additional examples of language that has been used to assign agency to other viruses (McGlone et al. 2013). Future research could also explore the effectiveness of adopting perceived agency manipulations from different contexts, such as giving the virus a first-person perspective in informational pamphlets (e.g., "I am the coronavirus"; Packard et al. 2018).

Second, our findings enable managers to develop expectations about how different political segments will behave as the COVID-19 pandemic evolves and market accordingly. For instance, firms that have a conservative-leaning customer base might avoid portraying the virus as agential (e.g., in marketing materials) while looking for creative ways to reattract customers. Interestingly, we found that the opposite may be true for firms that have a liberal-leaning base.

Extending beyond COVID-19, our findings suggest that conservatives (vs. liberals) may be less sensitive to other threats that individuals and society are likely to face if such threats are perceived to have low agency. To generalize our framework and boost the implications of our findings for other potential threats, we conducted a study that documents the relationship between social ideology and sensitivity to a variety of threats unrelated to COVID-19 that vary in their perceived agency.

Do Conservatives and Liberals Differ in their Sensitivity to Other High vs. Low Agency Threats?

Three-hundred MTurk participants ($M_{\text{age}} = 37.6$; 58% male) first rated their threat perceptions of ten entities (1 = Not a threat at all; 7 = Very much a threat). The list consisted of five low-agency entities ("a severe weather event", "a recreational injury", "a disease", "an

ocean rip current”, “an asteroid”) and five high-agency entities (“a terrorist”, “a thief”, “an aggressive animal”, “a violent criminal”, “a burglar”). As a more conservative test of our hypothesis, we omitted heavily politicized entities (e.g., climate change, immigrants, etc.) that likely would have exaggerated the size of the effect.

A pretest confirmed that on average, the five high agency threats ($M = 5.43$, $SD = 1.05$) were seen as having greater agency than the five low agency threats ($M = 4.80$, $SD = 1.65$; $t(49) = 2.68$, $p = .010$). Further, there was no difference between the high agency ($M = 5.15$, $SD = 1.28$) and low agency ($M = 5.25$, $SD = 1.15$) threats in terms of how politically polarizing the threats seemed to be on average ($t(49) = -.72$, $p = .476$; full pretest reported in supplemental documents).

Next, participants responded to the same ideology and demographic measures from studies 1 and 2.

Results and Discussion. We computed a measure of relative sensitivity to high agency threats by subtracting the average of the five low agency threats ($\alpha = .77$) from the average of the five high agency threats ($\alpha = .92$). As predicted, social conservatism was positively correlated with relative sensitivity to high agency threats ($r = .154$; $p = .008$). We also analyzed the data as a 2 (threat agency: high or low) by continuous (social ideology) mixed design. A significant interaction between threat agency and social ideology on perceived threat emerged ($b = .085$, $t(298) = 2.68$, $p = .008$). Social conservatism positively predicted perceived threat of high agency entities, though this was only directional ($b = .073$, $t(298) = 1.46$, $p = .146$), and did not predict perceived threat of low agency entities ($b = -.012$, $t(298) = -.29$, $p = .77$).

These results demonstrate a significant relationship between social ideology and the agency associated with different threats in general, such that social conservatism leads to greater relative sensitivity to high (vs. low) agency threats. Of course, many other factors may also determine whether our framework applies to various types of threats. For instance, while the threat of COVID-19 is psychologically distant and unobservable to many (at least at the time the studies were conducted), perceived agency may not as strongly moderate responses to highly observable, proximate threats (e.g., a tornado in one’s path). Such contextual factors, along with our focus on threats that are not highly politically-polarized, likely help to explain why conservatism did not reduce absolute sensitivity to low agency threats alone in this study. Future research should investigate this and other potential boundary conditions of our framework.

Theoretical Contributions

Prior research on political ideology suggests that social conservatives are generally *more* sensitive to threats than liberals (Lilienfeld and Latzman 2014; Crawford 2017; Jost 2017). Our framework extends this literature by showing that this is not necessarily the case when considering threats that are perceived to have low agency. One direction future work could explore is whether the degree of perceived agency of a threat also affects how inflicted harms are dealt with *after* they occur (e.g., how those who have been infected by COVID-19 are cared for).

Finally, our work builds on research in consumer behavior showing that conservatives are more likely to anthropomorphize products (Chan 2019). While tangible products can be considered extensions of the self (Belk 1988), and therefore easily anthropomorphized, our framework suggests that anthropomorphism may not occur as easily for stimuli highly devoid of human-like characteristics, such as viruses. While our data cannot directly speak to whether ideology causally impacts perceptions of the virus's agency, future research could examine whether partisan media outlets (e.g., CNN, Fox) naturally tend to use language that differs in terms of agency attributed to the virus to begin exploring this possibility.

Boundary Conditions and Limitations

The potential for our findings to inform interventions that successfully influence threat perceptions likely depends several factors. Chief among these is the malleability of individuals' perceptions of a threat's agency. It may simply not be possible to imbue certain entities with any degree of agency because perceiving them in this way would just be too unrealistic or unnatural. Additionally, a number of individual differences may influence how flexible one's agency beliefs are. For example, religiosity may limit individuals' propensity or ability to increase agency beliefs if they instead attribute all outcomes to a supernatural third-party. Another possibility is that individuals' experience with a threat may impact the malleability of their agency beliefs. When a threatening entity is novel, beliefs about it may be less engrained. However, as individuals become more familiar with an entity, it may become more difficult to influence their agency beliefs about it. Future research should examine how these and other factors affect the potential for threat perceptions to be influenced via manipulated agency.

Finally, political ideology has long been linked with demographic factors. While our studies accounted for some of these (i.e., age, gender, education level, income, home state), our data do not speak to some other important demographics, such as race. In the case of the

COVID-19 pandemic, Black and Latino communities have been disproportionately affected by the virus (Hooper, Nápoles, and Pérez-Stable 2020), and thus, it is possible that race could have an impact on threat perceptions, and potentially explain some of the correspondence between ideology and threat perceptions. We encourage exploration of other demographics in future research.

Conclusion. Recent work in the wake of the pandemic has shown that conservatives perceive COVID-19 to be less of a threat than liberals (Barrios and Hochberg 2020). We sought to understand one psychological factor, perceived agency of the threat, that influences how conservatives and liberals differentially respond to threats in hopes of positively contributing to remedial efforts during the COVID-19 pandemic.

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Figure 1: Interactive effect of social ideology and perceived agency of the virus on perceived likelihood of a second wave.

Figure 2: Interactive effect of social ideology and agency framing on belief that society is overreacting to COVID-19.

Supplemental Documents:

Getting Conservatives and Liberals to Agree on the COVID-19 Threat

This document contains the following information and materials about our studies:

- List of ideology and demographic measures collected in all studies
- Study 1 additional analyses
- Study 2 stimuli and additional analyses
- General Discussion study additional analyses

ALL STUDIES

Ideology Measures

Seven-item Scale of General Political Ideology (Kidwell et al. 2013).

- Please rate the extent to which you are in FAVOR of or AGAINST each of the following items (1 = Strongly against; 7 = Strongly in favor):
 - Capital punishment
 - Pro-life (anti-abortion) initiatives
 - Gun control [RC]
 - Socialized healthcare [RC]
 - Same-sex marriage [RC]
 - Illegal immigration [RC]
 - Democrats [RC]

Single-item Measure of General Political Ideology (Kidwell et al. 2013).

- Please rate your political beliefs on the following continuum, from VERY CONSERVATIVE to VERY LIBERAL
 - Political beliefs: 0 = Very conservative; 100 = Very liberal [RC]

Fiscal Ideology (Miller and Seligman 1999).

- Do you consider yourself fiscally conservative or liberal? (Fiscal conservatives typically advocate low taxes, reduced government spending, and minimal government debt)
 - 1 = Definitely fiscally conservative; 4 = Neither fiscally conservative nor liberal; 7 = Definitely fiscally liberal [RC]

Social Ideology (Miller and Seligman 1999).

- Do you consider yourself socially conservative or liberal? (In American political usage, the term "social liberalism" describes progressive stances on socio-political issues like abortion, same-sex marriage, and gun control)"
 - 1 = Definitely socially conservative; 4 = Neither socially conservative nor liberal; 7 = Definitely socially liberal [RC]

Demographic Measures

State.

- If you are from the US, what US state do you consider yourself from? [Drop down menu with all states]
 - Any Republican state in 2016 presidential election: 1

- Any Democratic state in 2016 presidential election: 0

Income.

- Please indicate your annual household income per year before taxes.
 - 1 = Less than \$10,000
 - 2 = \$10,000 - \$19,999
 - 3 = \$20,000 - \$29,999
 - 4 = \$30,000 - \$39,999
 - 5 = \$40,000 - \$49,999
 - 6 = \$50,000 - \$59,999
 - 7 = \$60,000 - \$69,999
 - 8 = \$70,000 - \$79,999
 - 9 = \$80,000 - \$89,999
 - 10 = \$90,000 - \$99,999
 - 11 = \$100,000 - \$149,999
 - 12 = \$150,00 or more

Education Level.

- What is the highest level of school you have completed or the highest degree you have received?
 - 1 = Less than high school degree
 - 2 = High school graduate (high school diploma or equivalent including GED)
 - 3 = Some college but no degree
 - 4 = Associate degree in college (2-year)
 - 5 = Bachelor's degree in college (4-year)
 - 6 = Master's degree
 - 7 = Doctoral or professional degree (PhD, JD, MD)

Gender.

- How do you identify your gender?
 - Male
 - Female
 - I identify another way
 - Prefer not to answer

Age.

- What is your age, in years (e.g., 40)?

STUDY 1

Correlation Table

		Correlations						
		Agency Perceptions	Social Conservatism	Blame Virus	Blame Policymakers	Perceived Likelihood of 2nd Wave	Perceived Threat of 2nd Wave	Planned Consumption
Agency Perceptions	Pearson Correlation	1	,067	,211**	,266**	,121*	,222**	,327**
	Sig. (2-tailed)		,247	,000	,000	,037	,000	,000
	N	300	300	300	300	300	300	300
Social Conservatism	Pearson Correlation	,067	1	-,271**	,227**	-,219**	-,278**	,070
	Sig. (2-tailed)	,247		,000	,000	,000	,000	,230
	N	300	300	300	300	300	300	300
Blame Virus	Pearson Correlation	,211**	-,271**	1	-,200**	,476**	,540**	-,161**
	Sig. (2-tailed)	,000	,000		,000	,000	,000	,005
	N	300	300	300	300	300	300	300
Blame Policymakers	Pearson Correlation	,266**	,227**	-,200**	1	-,124*	-,190**	,347**
	Sig. (2-tailed)	,000	,000	,000		,032	,001	,000
	N	300	300	300	300	300	300	300
Perceived Likelihood of 2nd Wave	Pearson Correlation	,121*	-,219**	,476**	-,124*	1	,589**	-,257**
	Sig. (2-tailed)	,037	,000	,000	,032		,000	,000
	N	300	300	300	300	300	300	300
Perceived Threat of 2nd Wave	Pearson Correlation	,222**	-,278**	,540**	-,190**	,589**	1	-,250**
	Sig. (2-tailed)	,000	,000	,000	,001	,000		,000
	N	300	300	300	300	300	300	300
Planned Consumption	Pearson Correlation	,327**	,070	-,161**	,347**	-,257**	-,250**	1
	Sig. (2-tailed)	,000	,230	,005	,000	,000	,000	
	N	300	300	300	300	300	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Regression Analysis: Full Results

Perceived Threat of Second Wave. We regressed perceived threat of a second wave of COVID-19 on social ideology ($M = 3.36$, $SD = 1.84$), perceived agency ($M = 3.21$, $SD = 2.07$), and their interaction (after mean-centering) as predictors. The analysis revealed a main effect of social ideology ($b = -.237$, $t(296) = -5.43$, $p < .001$), a main effect of perceived agency ($b = .172$, $t(296) = 4.55$, $p < .001$), and the predicted interaction ($b = .042$, $t(296) = 2.05$, $p = .041$). Floodlight analysis revealed that among individuals who perceived the virus to have low agency (below 5.66 on the scale; 85% of participants), social conservatives (relative to liberals) reported that a second wave of the pandemic would be less threatening. However, among individuals who perceived the virus to have high agency (above 5.66 on the scale; 15% of participants), the two ideologies reported that a second wave would be equally threatening. By slicing this interaction the other way, we see that the attenuation of differences in perceived threat of a second wave at high levels of perceived agency is driven by an increase among relatively conservative participants (above 1.63 on the social ideology measure; 83% of participants).

Fiscal Ideology as IV: Perceived Likelihood of Second Wave. We regressed each of the three dependent variables on fiscal ideology, perceived agency, and their interaction (after mean-centering). The analysis using perceived likelihood of a second wave as the dependent measure revealed a main effect of fiscal ideology ($b = -.138, t(296) = -3.18, p = .002$), a main effect of perceived agency ($b = .077, t(296) = 2.02, p = .044$), and a non-significant interaction ($b = .022, t(296) = 1.11, p = .267$).

Fiscal Ideology as IV: Perceived Threat of Second Wave. The analysis using perceived threat of a second wave as the dependent measure revealed a main effect of fiscal ideology ($b = -.229, t(296) = -5.11, p < .001$), a main effect of perceived agency ($b = .152, t(296) = 3.87, p < .001$), and a non-significant interaction ($b = .028, t(296) = 1.35, p = .178$).

Fiscal Ideology as IV: Planned In-person Consumption. The analysis using planned in-person consumption as the dependent measure revealed no main effect of fiscal ideology ($b = -.028, t(296) = -.63, p = .526$), a main effect of perceived agency ($b = .215, t(296) = 5.48, p < .001$), and an interaction ($b = -.091, t(296) = -4.39, p < .001$).

General Ideology as IV: Perceived Likelihood of Second Wave. We computed a measure of general ideology using the seven-item scale and the single-item scale by standardizing each variable and taking the average of the two ($r = .762$). We regressed each of the three dependent variables on general ideology, perceived agency, and their interaction (after mean-centering) as predictors. The analysis using perceived likelihood of a second wave as the dependent measure revealed a main effect of general ideology ($b = -.439, t(296) = -5.37, p < .001$), a main effect of perceived agency ($b = .104, t(296) = 2.83, p = .005$), and a non-significant interaction ($b = .059, t(296) = 1.50, p = .134$).

General Ideology as IV: Perceived Threat of Second Wave. The analysis using perceived threat of a second wave as the dependent measure revealed a main effect of general ideology ($b = -.626, t(296) = -7.50, p < .001$), a main effect of perceived agency ($b = .193, t(296) = 5.17, p < .001$), and a non-significant interaction ($b = .045, t(296) = 1.12, p = .266$).

General Ideology as IV: Planned In-person Consumption. The analysis using planned in-person consumption as the dependent measure revealed no main effect of general ideology ($b = .042, t(296) = .47, p = .637$), a main effect of perceived agency ($b = .235, t(296) = 5.97, p < .001$), and an interaction ($b = -.149, t(296) = -3.52, p < .001$).

Mediation by Blame Towards the Virus on Additional DVs

Perceived Likelihood of Second Wave (Policymakers Covariate Included). A test for moderated mediation (PROCESS Model 8; Hayes 2017) with blame towards forced economic

shutdowns (enacted by policymakers, who are one very salient agential force linked to the coronavirus at the time the study was run) included as a covariate revealed that when perceived agency of the virus was low (e.g., at the mean value of 3.21), social conservatives (vs. liberals) placed less blame on the virus, and this led them to believe a second wave of the pandemic was less threatening (indirect effect: $b = -.077$, $SE = .021$, 95% CI: $-.121, -.038$). When perceived agency of the virus was high (above 5.15; 15% of participants), social conservatives placed greater blame on the virus, and this significantly attenuated the effect of social ideology on threat perceptions of a second wave (index of moderated mediation: $b = .020$, $SE = .009$, 95% CI: $.003, .037$).

Perceived Threat of Second Wave. A test for moderated mediation (PROCESS Model 8; Hayes 2017) revealed that when perceived agency of the virus was low (e.g., at the mean value of 3.21), social conservatives (vs. liberals) placed less blame on the virus and this led them to believe a second wave of the pandemic was less threatening (indirect effect without blame towards forced economic shutdowns as a covariate: $b = -.106$, $SE = .025$, 95% CI: $-.157, -.062$; indirect effect with the covariate: $b = -.085$, $SE = .023$, 95% CI: $-.134, -.045$). When perceived agency of the virus was high (above approximately 5.50; 15% of participants), social conservatives placed greater blame on the virus, and this significantly attenuated the effect of social ideology on threat perceptions of a second wave (index of moderated mediation without covariate: $b = .027$, $SE = .010$, 95% CI: $.008, .046$; index of moderated mediation with covariate: $b = .022$, $SE = .009$, 95% CI: $.004, .041$).

Planned In-person Consumption. A test for moderated mediation (PROCESS Model 8; Hayes 2017) revealed that when perceived agency of the virus was low (e.g., at the mean value of 3.21), social conservatives (vs. liberals) placed less blame on the virus, and this led to an increase in planned in-person consumption (indirect effect without blame towards forced economic shutdowns as a covariate: $b = .080$, $SE = .020$, 95% CI: $.045, .122$; indirect effect with the covariate: $b = .033$, $SE = .013$, 95% CI: $.011, .062$). When perceived agency of the virus was high (above approximately 5.50; 15% of participants), social conservatives placed greater blame on the virus, and this significantly attenuated the effect of social ideology on planned in-person consumption (index of moderated mediation without covariate: $b = -.013$, $SE = .005$, 95% CI: $-.022, -.004$; index of moderated mediation with covariate: $b = -.009$, $SE = .004$, 95% CI: $-.017, -.001$).

Mediation by Difference Score (Blame Towards Virus – Blame Towards Forced Economic Shutdowns) on DVs

Perceived Likelihood of Second Wave. A test for moderated mediation (PROCESS Model 8; Hayes 2017) revealed that when perceived agency of the virus was low (e.g., at the mean value of 3.21), social conservatives (vs. liberals) placed less blame on the virus relative to the individuals behind forced economic shutdowns, and this led them to believe a second wave of the pandemic was less likely (indirect effect: $b = -.081$, $SE = .021$, 95% CI: $-.127, -.045$). When perceived agency of the virus was high (above approximately 5.70; 10.77% of participants), social conservatives placed greater relative blame on the virus itself, and this significantly attenuated the effect of social ideology on perceived likelihood of a second wave (index of moderated mediation: $b = .020$, $SE = .007$, 95% CI: $.007, .035$).

Perceived Threat of Second Wave. A test for moderated mediation (PROCESS Model 8; Hayes 2017) revealed that when perceived agency of the virus was low (e.g., at the mean value of 3.21), social conservatives (vs. liberals) placed less blame on the virus relative to the individuals behind forced economic shutdowns, and this led them to believe a second wave of the pandemic was less threatening (indirect effect: $b = -.108$, $SE = .023$, 95% CI: $-.158, -.065$). When perceived agency of the virus was high (above approximately 5.70; 10.77% of participants), social conservatives placed greater relative blame on the virus, and this significantly attenuated the effect of social ideology on threat perceptions of a second wave (index of moderated mediation: $b = .026$, $SE = .009$, 95% CI: $.010, .045$).

Planned In-person Consumption. A test for moderated mediation (PROCESS Model 8; Hayes 2017) revealed that when perceived agency of the virus was low (e.g., at the mean value of 3.21), social conservatives (vs. liberals) placed less blame on the virus relative to the individuals behind forced economic shutdowns, and this led to an increase in planned in-person consumption (indirect effect: $b = .080$, $SE = .020$, 95% CI: $.045, .122$). When perceived agency of the virus was high (above approximately 5.70; 10.77% of participants), social conservatives placed greater relative blame on the virus, and this significantly attenuated the effect of social ideology on planned in-person consumption (index of moderated mediation: $b = -.019$, $SE = .006$, 95% CI: $-.032, -.008$).

STUDY 2

Stimuli

High Agency Condition:

The stimulus for the High Agency Condition is presented within a light blue rectangular frame. At the top, a horizontal line separates a header area containing the word "information" in red. Below this, the words "CORONAVIRUS" and "COVID-19" are displayed in large, bold, blue capital letters. To the right of the text is a faint, stylized illustration of a coronavirus particle. A second horizontal line is positioned below the text. The background of the frame features a subtle, light blue grid pattern.

COVID-19 is caused by a novel coronavirus that seeks to infect any human it comes in contact with.

The virus has a strong motive to use humans as a means to spread, and it can have a serious impact on people's health.

Control Condition:

The stimulus for the Control Condition is presented within a light blue rectangular frame, identical in layout to the High Agency Condition. It features the word "information" in red at the top, followed by "CORONAVIRUS" and "COVID-19" in large, bold, blue capital letters, and a faint coronavirus illustration to the right. A horizontal line is below the text. The background has a subtle light blue grid pattern.

COVID-19 is caused by a novel coronavirus that can infect any human it comes in contact with.

The virus is spread as more humans contract it, and it can have a serious impact on people's health.

Correlation Table

Correlations

		Social Conservatism	Threat Perception	Willingness to Take Protective Measures	Belief that Society is Overreacting
Social Conservatism	Pearson Correlation	1	-,329**	-,272**	,183**
	Sig. (2-tailed)		,000	,000	,001
	N	300	300	300	300
Threat Perception	Pearson Correlation	-,329**	1	,805**	-,560**
	Sig. (2-tailed)	,000		,000	,000
	N	300	300	300	300
Willingness to Take Protective Measures	Pearson Correlation	-,272**	,805**	1	-,540**
	Sig. (2-tailed)	,000	,000		,000
	N	300	300	300	300
Belief that Society is Overreacting	Pearson Correlation	,183**	-,560**	-,540**	1
	Sig. (2-tailed)	,001	,000	,000	
	N	300	300	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis: Full Results

Fiscal Ideology as IV: Threat Perception of the Virus. We regressed the three dependent variables on fiscal ideology, agency, and their interaction (after mean-centering). The analysis using perceived threat as the dependent measure revealed a main effect of fiscal ideology ($b = -.122$, $t(296) = -3.64$, $p < .001$), no effect of agency ($b = -.020$, $t(296) = -.17$, $p = .868$), and an interaction ($b = .234$, $t(296) = 3.49$, $p = .001$).

Fiscal Ideology as IV: Willingness to take Protective Measures. The analysis using willingness to take protective measures as the dependent measure revealed a main effect of fiscal ideology ($b = -.130$, $t(296) = -3.63$, $p < .001$), no effect of agency ($b = .080$, $t(296) = .61$, $p = .539$), and an interaction ($b = .170$, $t(296) = 2.37$, $p = .018$).

Fiscal Ideology as IV: Belief that Society is Overreacting. The analysis using belief that society is overreacting as the dependent measure revealed no main effect of fiscal ideology ($b = .079$, $t(296) = 1.22$, $p = .223$), no effect of agency ($b = -.016$, $t(296) = -.07$, $p = .945$), and a marginally significant interaction ($b = -.241$, $t(296) = -1.86$, $p = .065$).

General Ideology as IV: Threat Perception of the Virus. We computed a measure of general ideology using the seven-item scale and the single-item scale by standardizing each variable and taking the average of the two ($r = .724$). We regressed the three dependent variables on general ideology, agency, and their interaction (after mean-centering). The analysis using perceived threat as the dependent measure revealed a main effect of general ideology ($b = -.424$, $t(296) = -6.68$, $p < .001$), no effect of agency ($b = .010$, $t(296) = .09$, $p = .932$), and an interaction ($b = .259$, $t(296) = 2.04$, $p = .042$).

General Ideology as IV: Willingness to take Protective Measures. The analysis using willingness to take protective measures as the dependent measure revealed a main effect of general ideology ($b = -.394$, $t(296) = -5.76$, $p < .001$), no effect of agency ($b = .108$, $t(296) = .85$, $p = .394$), and a non-significant interaction ($b = .203$, $t(296) = 1.48$, $p = .140$).

General Ideology as IV: Belief that Society is Overreacting. The analysis using belief that society is overreacting as the dependent measure revealed a main effect of general ideology ($b = .720$, $t(296) = 6.00$, $p < .001$), no effect of agency ($b = -.065$, $t(296) = -.29$, $p = .770$), and a non-significant interaction ($b = -.340$, $t(296) = -1.42$, $p = .158$).

GENERAL DISCUSSION STUDY

Pretest.

We conducted a pretest to confirm that the ten threats in the main study varied in terms of perceived agency. Participants ($n = 50$) rated how much each entity “has a specific motive to negatively impact your life” (1 = Does not at all have a specific motive to negatively impact me; 7 = Has a very strong specific motive to negatively impact me), and how much it “has a mind of its own” (1 = Does not at all have a mind of its own; 7 = Very much has a mind of its own), combined into a perceived agency composite for each entity. We created perceived agency composite variables by taking the average of the five high agency entities ($\alpha = .87$) and the five low agency entities ($\alpha = .95$), respectively. Additionally, to establish that perceptions of agency influence liberals’ and conservatives’ threat perceptions regardless of how heavily politicized an issue is, we also assessed participants’ beliefs about whether liberals and conservatives differ in their likelihood of addressing each threat (1 = Conservatives are much more likely to address the threat associated with this; 4 = Not politically-polarized; 7 = Liberals are much more likely to address the threat associated with this). We then created a high agency composite ($\alpha = .87$) and a low agency composite ($\alpha = .86$) for political polarization.

As expected, a paired-sample t-test revealed that the high agency threats ($M = 5.43$, $SD = 1.05$) were seen as possessing greater agency than the low agency threats ($M = 4.80$, $SD = 1.65$; $t(49) = 2.68$, $p = .010$). Another paired-sample t-test revealed that the high agency ($M = 5.15$, $SD = 1.28$) and the low agency ($M = 5.25$, $SD = 1.15$) threats did not significantly differ in terms of perceived political polarization ($t(49) = -.72$, $p = .476$). The effect of agency remained significant when controlling for the difference in average political polarization between the two groups ($F(1, 48) = 6.49$, $p = .014$).

Analysis Using Other Ideology Measures

Fiscal Ideology as IV.

A correlation analysis revealed that fiscal ideology was not significantly associated with relative sensitivity to high agency threats ($r = .071$; $p = .219$).

General Ideology as IV.

We computed a measure of general ideology using the seven-item scale and the single-item scale by standardizing each variable and taking the average of the two ($r = .712$). A correlation analysis revealed that general ideology was significantly associated with relative

sensitivity to high agency threats ($r = .161$; $p = .005$), such that conservatives (compared to liberals) were relatively more sensitive to high agency threats.

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