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Why do U.S. conservatives take fewer COVID-19 precautions? The role of worry, perceived risk, and governmental trust

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Abstract

Research suggests a U.S. political ideology gap for taking COVID-19 precautions, but we do not know the role of cognitive risk (assessed here as perceived risk) and affective risk (assessed here as worry) in explaining why conservative Americans participated in fewer recommended precautions (e.g., mask wearing) and whether governmental trust attenuates the effect. We predicted that conservatives (compared with liberals) would take fewer precautions because they thought they were less at risk and were less worried about COVID-19, but that this would be more pronounced for those with low governmental trust. In this study, U.S. adults (representative sample: N = 738; M_{age} = 46.8; 52% women; 78% white) who had not had COVID-19 took two online surveys 2 weeks apart during the first wave of the pandemic (April 2020). Participants reported ideology, perceived risk of getting or dying of COVID-19, worry about COVID-19, and trust in the CDC and state officials at baseline. At follow-up, participants reported on COVID-19 precautions: (1) prevention behavior participation (e.g., mask wearing) and (2) behavioral willingness for future behaviors (e.g., vaccination). Results showed that, politically conservative Americans took fewer precautions due to lower worry (but unexpectedly not due to lower perceived risk). As predicted, when trust was high, the ideology gap was muted for predicting precautions as well as for predicting perceived risk and

worry. In sum, conservatives worried less about COVID-19 which predicted fewer precautions, but trust in governmental institutions reduced this ideological gap. Improving governmental trust could be one fruitful path to increasing COVID-19 precautions.

1 | INTRODUCTION

Conservative political ideology predicts opposition to pandemic restrictions and taking fewer precautions in many countries, but particularly in the U.S. (Becher et al., 2021; Connaughton, 2021; Kerr et al., 2021). In fact, being a conservative is a risk factor that is associated with both hospitalization and death. For example, U.S. counties that voted for Trump (compared to those that voted for Clinton) engaged in less social distancing which in turn was tied to higher COVID-19 infection and fatality rates (Gollwitzer et al., 2020). Paradoxically, conservatives think their personal COVID-19 risk is lower than liberals think their risk is (e.g., Kerr et al., 2021; Kiviniemi et al., 2022) and conservatives are also less worried about COVID-19 (McLamore et al., 2022).

The ideological gap in taking COVID-19 precautions is likely multiply determined (e.g., Pennycook et al., 2022) but what has not yet been examined are the roles of cognitive risk (here assessed as perceived risk; also at times referred to as susceptibility or vulnerability) and affective risk (here assessed as worry); two important and distinct predictors of health behaviors (Portnoy et al., 2014). With respect to perceived risk, one study found that perceived risk mediated the path from ideology to precautions (Gratz et al., 2021). With respect to worry, a study (not related to ideology) found that worry was more important than perceived risk in predicting COVID-19 precautions (Helweg-Larsen et al., 2022). Thus, we tentatively expected that when perceived risk and worry were considered together, conservatives would take fewer COVID-19 precautions because they thought they were less at risk and were less worried about COVID-19.

In addition to understanding why conservative ideology may relate to fewer COVID-19 precautions, it is important to identify under what conditions. Trust is a key variable in health behaviors because people only attend to information about their risks, worries, or precautions if they trust the source (Bish & Michie, 2010). Trust in government (local officials and organizations such as the CDC) was particularly important early in the COVID-19 pandemic when information was more uncertain (Ratcliff et al., 2022). Generally, conservative political ideology is associated with lower COVID-19 governmental trust (e.g., Gratz et al., 2021), and low governmental trust in turn predicts fewer COVID-19 precautions (e.g., Shanka & Menebo, 2022). Importantly, an analysis of county-level data showed that conservative areas had greater participation in COVID-19 precautions when Republican leaders supported stay-at-home orders (Goldstein & Wiedemann, 2022). It is not clear, however, that this finding was due to conservatives' greater trust in their leaders or in the government. They also did not investigate how people's individual-level ideology and risk perceptions mattered for taking precautions. Because governmental trust appears to be an important factor in people's health-related behaviors, we examined whether higher governmental trust would reduce the strength of the relationship between ideology and precautions (via perceived risk or worry).

1.1 | The present study

Our goal was to examine if, why, and under what conditions conservative ideology was associated with lower COVID-19 precautions. We examined perceived risk and worry as mediators and governmental trust as a moderator. The

outcomes were (1) prevention behaviors: behaviors that were possible and encouraged (such as social distancing, handwashing, and mask-wearing) and (2) behavioral willingness: openness to behaviors not yet available (such as contact tracing and COVID-19 vaccination).

We investigated:

1. whether the relationship between ideology to precautions was mediated by perceived risk or worry. We expected that conservatives would take fewer precautions, and this would be due to both their lower perceived risk and lower worry.
2. whether governmental trust moderated the effects of the indirect paths (from ideology to precautions via perceived risk/worry) or the direct path (from ideology to precautions). In general, we expected that high trust would attenuate the ideology gap so that ideology mattered less when trust was high.
3. whether governmental trust moderated the paths from ideology to perceived risk or worry. Again, we expected that trust would attenuate the ideology gap such that ideology would be less predictive of perceived risk or worry when trust was high.

2 | METHOD

2.1 | Preregistration and power analyses

This study was preregistered at Open Science Framework: https://osf.io/ufb2v. The preregistration included our main effects hypotheses of trust, worry, and perceived risk but not the specific moderation and mediation patterns examined. Using G*Power (version 3.1.9.6; $f = 0.10$, power = 0.95, alpha = 0.05, 17 predictors) we found that we needed a total of 305 participants; thus our sample of $N = 738$ was adequately powered.

2.2 | Participants

We obtained a representative sample on Prolific which uses the prescreen responses from potential participants to recruit participants until the sample is matched to the U.S. census by age, race/ethnicity, and gender. Participants ($N = 738$ US adults who had not had nor suspected they might have had COVID-19) completed surveys two weeks apart in April 2020. Ages ranged from 18 to 82 ($M = 46.79$, SD = 15.93), 51.8% were women. Participants reported their educational level such that 26.8% had obtained a high school education, 14.5% had received an associate's degree, 37.4% had completed a bachelor's education, and 20.7% had post college education. Participants identified as White (78.0%), Black (12.3%), Asian (7.0%), or other (2.6%); 5.7% indicated they were Hispanic. Their political party affiliation was 50.3% Democrat, 15.0% Republican, 27.9% Independent, and 6.7% other/does not apply/don't know. In the 2016 election 45.4% of participants reported voting for Hilary Clinton, 17.5% for Donald Trump, 11.8% for other candidates, and 25.3% did not vote.

2.3 | Procedure

The surveys opened with an informed consent and concluded with a debriefing with links to coronavirus resources. Participants were paid around $10 per hour. The study was approved by the Institutional Review Board at Dickinson College.

2.4 | Control variables

We controlled for age, gender, race, Hispanic ethnicity, highest educational degree earned, and self-reported social class (coded 1 = poor, 2 = working class, 3 = middle class, 4 = upper-middle class, 5 = upper class). We also controlled

for participants' personal assessment of whether they belonged to a risk group (38% said they felt they belonged to a "vulnerable or at-risk group for coronavirus"). Finally, we controlled for the actual COVID-19 rates at the time of the survey in the county in which the participant resided by obtaining epidemiological infection/death rates from the Johns Hopkins University Dashboard (Dong et al., 2020).

For all constructs, unless otherwise specified, higher numbers signify more of the construct and were from Helweg-Larsen et al. (2022).

2.5 | Time 1 predictor variables

2.5.1 | Political ideology

We used an established and reliable item to capture political ideology (Jost et al., 2003) using a 7-point scale (1 = *extremely liberal*, 4 = *neither*, 7 = *extremely conservative*); M = 3.23, SD = 1.64, range 1–7. For COVID-19 outcomes results are similar whether political orientation is measured via political ideology or partisanship (Kerr et al., 2021).

2.5.2 | Perceived COVID-19 risk

We assessed perceived risk with two questions, "How likely do you think you are to become [would be to die if you became] infected with the coronavirus?" with a sliding scale from 0 = *Very unlikely* to 100 = *Very likely*. Items which were correlated, $r(738) = 0.36$, $p < 0.001$ and averaged (M = 24.84, SD = 20.59, range 0–94.5).

2.5.3 | COVID-19 worry

We measured how much people worry about getting infected with COVID-19, worry about people you know getting infected with COVID-19, and worry about the coronavirus outbreak in general (1 = *never or very little* to 5 = *all the time*). Items were averaged ($\alpha = 0.88$, M = 3.04, SD = 0.99, range 1–5).

2.5.4 | Governmental trust in COVID-19 response

We assessed state and federal governmental trust with two questions "I trust the way my state officials [U.S. government institutions (such as the CDC)] are dealing with the coronavirus outbreak (1 = *Strongly disagree* to 5 = *Strongly agree*). The two items were correlated, $r(738) = 0.39$, $p < 0.001$ and averaged (M = 3.48, SD = 1.01, range 1–5).

2.6 | Time 2 precautions

2.6.1 | Prevention behaviors

To allow for directional inference, participants reported their coronavirus prevention behaviors in the past 2 weeks at Time 2. We asked seven different behaviors (e.g., social distancing; see Supplemental Materials) on a 5-point scale from *Strongly disagree* to *Strongly agree* ($\alpha = 0.77$, M = 4.11, SD = 0.77, range 1–5).

2.6.2 | Behavioral willingness

Participants reported their willingness to participate in coronavirus prevention behaviors that were not widely adopted in the U.S. at the time (e.g., contact tracing, temperature screening, coronavirus vaccination (Peterson et al., 2021).

Willingness is an appropriate behavioral decision cognition for novel or new behaviors (Gibbons et al., 2015). See Supplemental Materials for items; scale from 1 = *Not at all willing/Extremely unlikely* to 5 = *Completely willing/Extremely likely* (α = 0.87, M = 4.04, SD = 0.90, range 1–5).

3 | RESULTS

3.1 | Analysis strategy

For the regression analyses we used PROCESS v 4.2 macro in SPSS (Hayes, 2022). We set the regression parameters at 5000 bootstrap bias-corrected samples, 95% confidence intervals, and mean-centered products. We report unstandardized regression weights along with their *p* values and 95% confidence intervals. Figures 3–5 depict the variable on the *x*-axis as dichotomized at the 16th and 84th percentiles of the data, as recommended by Hayes (2022); we also report the results of the Johnson-Neyman technique to show where the conditional effect of X on Y transitions between statistically significant and not significant. The full regression results are available in the supplemental materials (Tables S2-S5). Table 1 shows correlations among the study variables. Figure 1 displays the three research questions.

3.2 | Research question 1

We examined if the paths from ideology to precautions were mediated by perceived risk or worry. We used PROCESS Model 4 to test two mediational models with each precaution as the outcome. Results appear in Figure 2. Overall, mediation models showed that ideology significantly predicted both prevention behaviors (b = −0.0762, t = −4.5409, p < 0.0001, CI [−0.1091, −0.0432]) and behavioral willingness (b = −0.1982, t = −10.3286, p < 0.001, CI [−0.2359, −0.1605]). First, as expected political ideology had a direct effect (bolded in Figure 2) on both prevention behaviors (b = −0.0367, t = −2.2505, p = 0.0247, CI [−0.0687, −0.0047]) and behavioral willingness (b = −0.1603, t = −8.4262, p < 0.0001, CI [−0.1976, −0.1229]), such that more conservatism was associated with less participation in both precautions. Worry was as expected a mediator (indirect path bolded on Figure 2) for both prevention behaviors (b = −0.0398, CI [−0.0564, −0.0257]) and behavioral willingness (b = −0.0384, CI [−0.0557, −0.0235]) whereas perceived risk contrary to expectations was not a mediator for either prevention behaviors (b = 0.0005, CI [−0.0015, 0.0034]) or behavioral willingness (b = 0.0004, CI [−0.0019, 0.0040]). In short, conservatives (compared to liberals)

T A B L E 1 Bivariate correlations among study variables.

Measure	1	2	3	4	5	6
1. Ideology	--	−0.05	−0.24**	0.03	−0.17**	−0.36**
2. Perceived risk	−0.09*	--	0.48**	−0.08*	0.16**	0.14**
3. Worry	−0.28*	0.51**	--	−0.02	0.37**	0.35**
4. Governmental trust	0.04	−0.08*	−0.01	--	0.10**	0.25**
5. Prevention behaviors	−0.17**	0.19**	0.38**	0.12**	--	0.38**
6. Behavioral willingness	−0.36**	0.18**	0.37**	0.26**	0.41**	--
Measured at	Time 1	Time 1	Time 1	Time 2	Time 2	Time 2

Note: Below Diagonal Correlations Without Any Controls; Above the Diagonal Correlations Control for Age, Gender, Race, Ethnicity, Education, Social Class, Belonging to a Vulnerable Group, and the County-Level Actual Prevalence of COVID-19 Infection/Death.
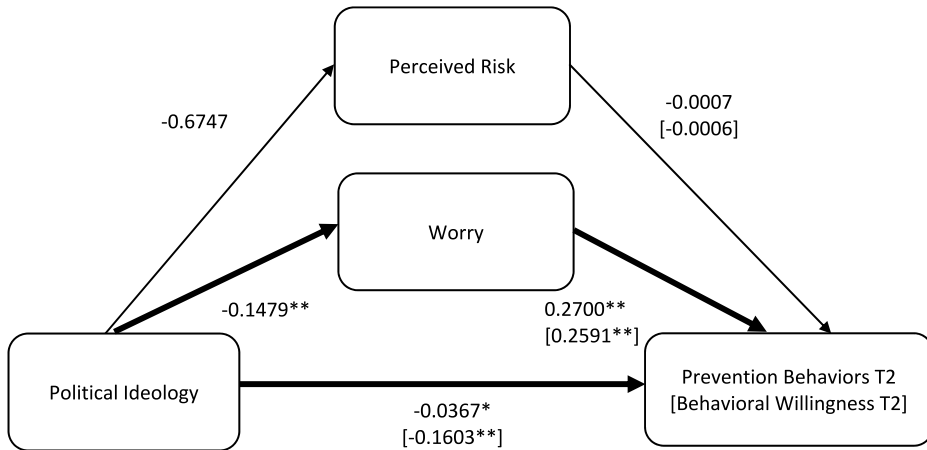
*p < 0.05, **p < 0.001, N = 738.
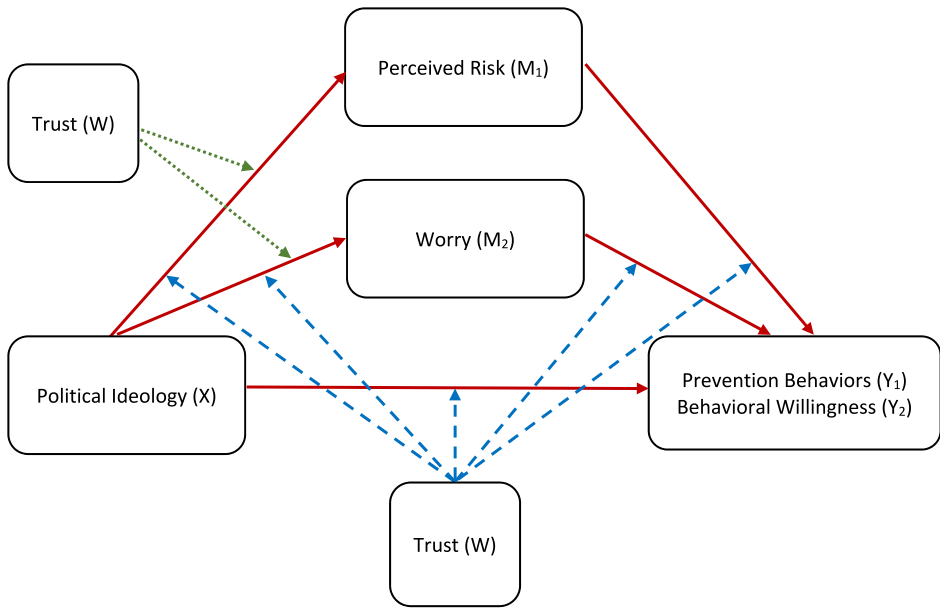
Note: X = predictor, Y=outcome, W=Moderator, M=Mediator.

→ Q1: Direct (X→Y) and indirect (X→M→Y) effects

- - - → Q2: Trust (W) as moderator of the direct (X→Y) and indirect (X→M→Y) effects

- - - - → Q3: Trust (W) as moderator of the direct (X→M) effects from political ideology to perceived

risk or worry

FIGURE 1   Proposed Moderated Mediational Model.

**p<.01. *p<.05

FIGURE 2   The Mediation Model of the Effect of Political Ideology via Perceived Risk and Worry on Prevention Behaviors and Behavioral Willingness (Research Question 1). The significant direct path and the indirect paths are bolded in the figure. Values reported as unstandardized effect sizes. The values in brackets are for behavioral willingness.

saw their risk as lower and were less worried, but only worry (and not perceived risk) mediated the path from conservative ideology to fewer precautions.

3.3 | Research question 2

To examine if trust moderated the direct and indirect paths from ideology to precautions, we used a moderated mediation model (PROCESS Model 59).

First examining the direct paths, we found that the direct path from ideology to precautions was moderated by trust (that is, we found an Ideology × Trust interaction) for prevention behaviors, $F(1, 711) = 5.2243$, $p = 0.0226$. As seen in Figure 3, Panel A, the interaction revealed that when trust was low, ideology predicted prevention behaviors ($b = -0.0710$, $t = -3.1069$, $p = 0.0020$, CI [−0.1158, −0.0261]) but not when trust was high ($b = 0.0001$, $t = 0.0046$, $p = .9964$, CI [−0.0430, 0.0432]). The Johnson-Neyman regions of significance showed that for participants with the highest 47% of trust scores the ideology gap disappeared in predicting prevention behaviors.

A similar pattern emerged for behavioral willingness, where the interaction between ideology and trust for behavioral willingness was significant $F(1, 711) = 7.1818$, $p = 0.0075$ (see Figure 3, Panel B). In contrast to the results for precaution behaviors, analyses probing the interaction showed that ideology did predict lower behavioral willingness at all levels of trust (the Johnson-Neyman regions of significance could not calculate statistically significant transition points), but among those with lower trust, the political ideology and willingness relation was stronger (effect = −0.2097, $t = -8.2132$, $p < 0.001$, CI [−0.2598, −0.1596]) than higher trust (effect = −0.1166, $t = -4.7551$, $p < 0.001$, CI [−0.1647, −0.0684]).

Second, we examined moderation of the indirect paths between ideology and precaution paths by trust. We found that neither of the indirect paths were moderated by trust for either precaution variable. That is, when considering trust as a moderator of the indirect path via perceived risk the results showed the indirect path (ideology → perceived risk → outcomes) continued to be non-significant at low, medium, and high levels of trust for both precautions (effects ranged from −0.0006 to 0.0002). Similarly, trust did not moderate the indirect path via worry. The indirect path (ideology → worry → outcomes) continued to be significant at low, medium, and high levels of trusts for both precautions (effects ranged from −0.0635 to 0.0194).

In sum, while trust in governmental response did not moderate the indirect paths between political ideology and COVID-19 perceived risk and worry, the direct path from ideology to precaution disappeared (for prevention behavior) or was weakened (for behavioral willingness) when trust in state and federal governmental response to the pandemic was high.

3.4 | Research question 3

We now examined whether trust moderated the paths from ideology to perceived risk or worry. We used the results from PROCESS Model 59 above: the predictor was ideology, the moderator was trust, and the outcomes were perceived risk or worry.

For COVID-19 perceived risk, the Ideology × Trust interaction was significant ($b = 1.0110$, $t = 2.4234$, $p = 0.0156$, CI [0.1920, 1.8301]). As shown in Figure 4, when trust was low ideology predicted lower perceived risk ($b = -1.6387$, $t = 2.6631$, $p = 0.0079$, CI [−2.8467, −0.4306) but when trust was high, there was no relationship between ideology and perceived risk ($b = 0.3833$, $t = 0.6176$, $p = 0.5370$, CI [−0.8352, 1.6019]). The Johnson-Neyman regions of significance showed that when predicting perceived risk, the ideology gap disappeared for the highest 62% of trust scores.
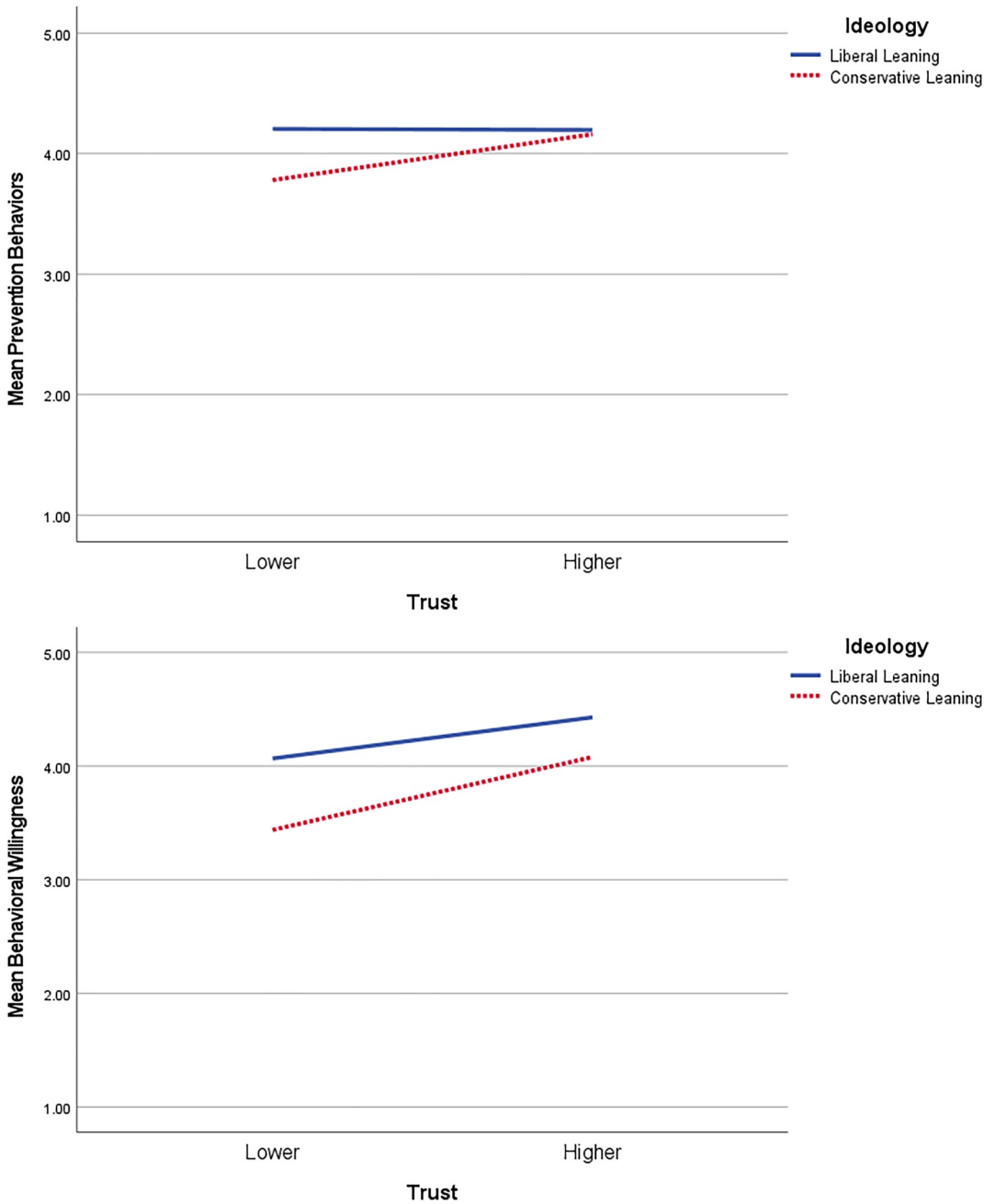
FIGURE 3 Panel A: Interaction between ideology and trust for prevention behaviors (research question 2). Panel B: Interaction between ideology and trust for behavioral willingness (research question 2).

For COVID-19 worry, we found an Ideology × Trust interaction ($b = 0.0517$, $t = 2.5814$, $p = 0.0100$, CI [0.0124, 0.0911]); see Figure 5. Whether trust was low ($b = -0.1988$, $t = -6.7277$, $p < 0.0001$, CI [−0.2569, −0.1408]) or high ($b = -0.0954$, $t = -3.1995$, $p = 0.0014$, CI [−0.1539, −0.0369]) ideology predicted lower worry. The Johnson-Neyman regions of significance showed that when predicting worry, the ideology gap disappeared for the highest 9% of trust scores.
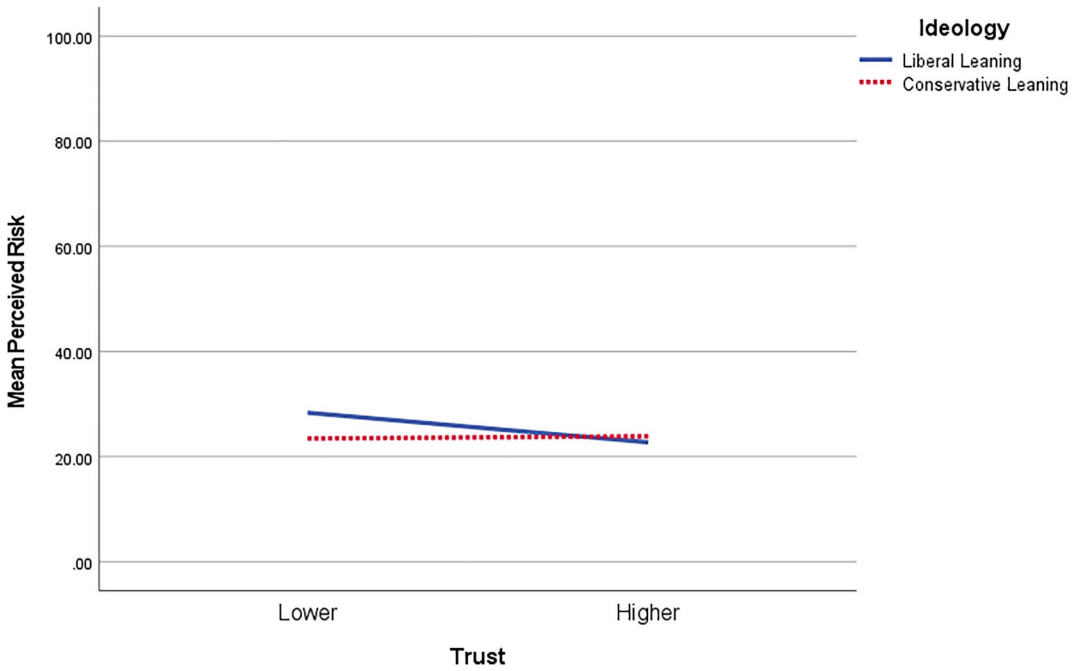
FIGURE 4 Interaction between ideology and trust for perceived risk (research question 3).
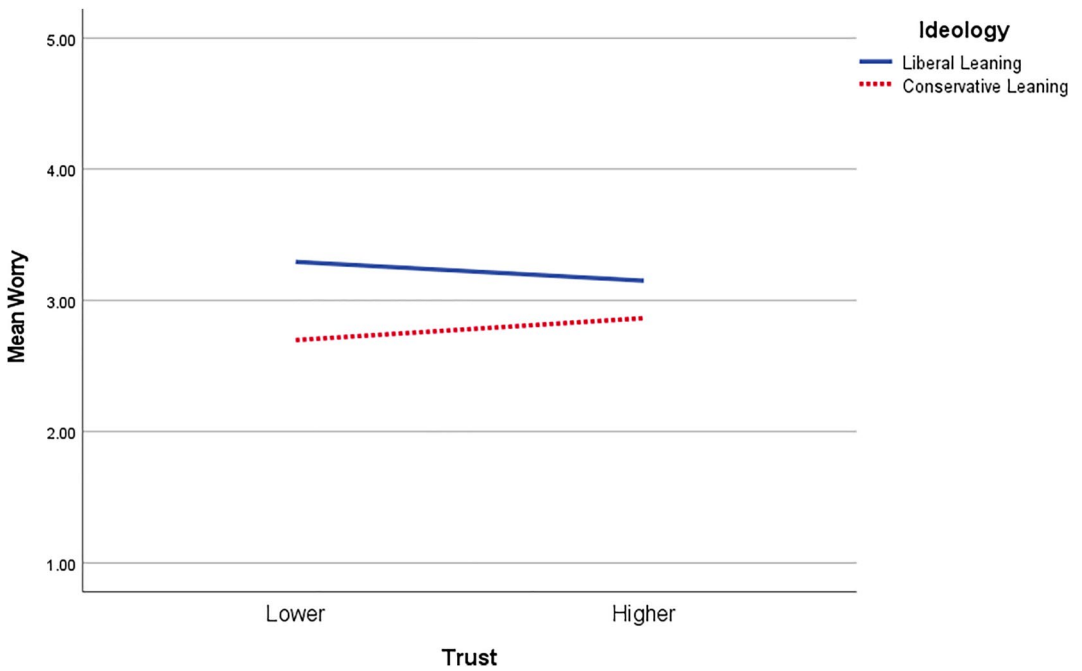

FIGURE 5 Interaction between ideology and trust for worry (research question 3).

4 | DISCUSSION

As expected, the ideology gap revealed that more conservative individuals took fewer COVID-19 precautions (like handwashing) and were less willing to engage in future COVID-19 precautions (like intent to get vaccinated). Lower worry (but unexpectedly not lower perceived risk) explained the link from conservative ideology to fewer precautions (Q1). Governmental trust did not attenuate these indirect effects (Q2). However, governmental trust did attenuate the direct effect from ideology to precautions (Q2) and the paths from ideology to perceived risk and worry (Q3). Thus, as expected, high trust muted many of the effects of ideology on COVID-19 precautions as well as on perceived risk and worry. Importantly these findings controlled for gender, age, social status, education, vulnerability to COVID-19, and the actual local prevalence of COVID-19 infection and death. One limitation is that we only measured trust in state and federal government and not trust in other entities such as in science or medical professionals (e.g., Dryhurst et al., 2020).

Understanding the role of perceived risk, worry, and trust in predicting precautions is important for understanding the ideology gap and for designing health interventions. We found that conservative ideology was associated with fewer precautions via lower worry and not via lower perceived risk. This finding is consistent with research showing a much greater role of worry (vs. perceived risk) in predicting flu vaccinations (Chapman & Coups, 2006; Renner & Reuter, 2012) and COVID-19 precautions (Helweg-Larsen, et al., 2022). Although perceived risk and worry are clearly related, these findings suggest that people take a "risk-as-feelings" approach (Slovic, 1987) in which worry (or the lack of worry) triggers the preventive actions (or lack thereof) rather than the perception of risk of infection or death.

The finding that high trust muted the ideology gap suggests that increasing trust in government institutions and identifying trusted government messengers are important goals. One approach is to harness the trust of people who are already trusted such as clergy (Pew Research Center, 2021) or one's own doctors (Hamel et al., 2021). Another approach is to be more transparent about both costs and benefits of COVID-19 precautions such as vaccines. In several experimental studies, Petersen et al. (2021) showed that being transparent in communicating negative information about vaccines might have short-term effects of lowering adherence but long-term increase in trust and suppression of conspiracy beliefs. Vague communication about prevention behaviors can backfire, leading to both short-term skepticism and long-term distrust of communicators. Trust is a promising avenue for future interventions as trust can be earned; future research should examine how to increase governmental trust.

CONFLICT OF INTEREST STATEMENT
We have no conflicts of interest to disclose.

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available from the corresponding author upon reasonable request.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.