SPECIAL COLLECTION: TECHNOLOGY IN A TIME OF SOCIAL DISTANCING

On Efficient Mass-Media Messages During the COVID-19 Pandemic: The Role of Expertise and Expressed Social Identity

J. Lukas Thürmer¹ and Sean M. McCrea²

¹ Department of Psychology, Paris-Lodron University Salzburg

² Department of Psychology, University of Wyoming

The Coronavirus disease (COVID-19) pandemic requires swift behavior change based on the most up-to-date recommendations. To reach many people, the use of mass media and technology is key. We therefore investigate how health advice in the media can most effectively change behavioral intentions. Specifically, we integrate the literature on science rejection and on intergroup criticism to argue that people are likely to follow expert advice, but only if these experts communicate a common group identity (“we”). Our preregistered and high-powered experiment showed weak support for these registered hypotheses. Exploratory moderation analyses including trust in science and political orientation produced inconsistent results. Exploratory mediation analyses showed a consistent positive impact of rated expertise on intention to comply and perceived inadequacy of public response, mediated by message motive ratings. Health experts or public figures who communicate health-advice in the media should thus clarify their expertise and intention. We discuss implications and future directions.

Keywords: motivation/goals, self-defensiveness, intergroup sensitivity effect, Coronavirus: COVID-19 and SARS-COV-2

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ORCID iDs: J. Lukas Thürmer <https://orcid.org/0000-0002-5315-2847>; Sean M. McCrea <https://orcid.org/0000-0003-4241-5530>.

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Open Science Disclosures:

The data are available at <https://osf.io/ex42g/>

The experiment materials are available at <https://osf.io/ex42g/>

The preregistered design is available at <https://aspredicted.org/mz96q.pdf>

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Contact Information: Correspondence concerning this article should be addressed to J. Lukas Thürmer, Department of Psychology, Paris-Lodron University Salzburg, Hellbrunner Straße 34, Salzburg 5020, Austria. Email: lukas.thuermer@sbg.ac.at

Now is a time to be listening to our scientists and to our government officials; not to be casting them as colluders, manipulators and liars. (Hornsey, 2020, p. 58)

Coronavirus disease (COVID-19) is a global pandemic, affecting millions of people around the globe. The spread of the Coronavirus is highly contingent on individual behavior (Van Bavel et al., 2020), and it is therefore imperative to communicate the latest scientific evidence efficiently in mass media to induce behavior change. During lockdown, any social contact outside the home was forbidden and even doctors’ visits, usually an important source of health information, were discouraged. Media messages were therefore key to elicit an effective pandemic response. In the current paper, we therefore investigate how to increase the effectiveness of these messages.

Specifically, we focus on the expertise and expressed identity of the source delivering the message. A common approach in the media is to have experts (e.g., scientists) deliver health recommendations, with the assumption that expertise will make messages convincing. However, more and more people reject science (Hornsey & Fielding, 2017) and behavior change appeals may thus evoke a threat response with consequent rejection of the message.

Research, moreover, shows that critical messages are rejected when the source identifies with an outgroup (e.g., *we* scientists vs. *you* general public). In fact, outgroup criticism commonly elicits defensiveness in self-reports and behavior (Thürmer et al., 2019;

Thürmer & McCrea, 2018). This research indicates that expressed group membership is a key dimension when it comes to communicating behavioral advice to the general public. We therefore conducted a preregistered and high-powered study to investigate if high messenger expertise and expressed common group membership increase peoples' intentions to follow scientific COVID-19 advice.

Expertise, Science Rejection, and Compliance

A common assumption is that people are rational information processors, with the only goal to synthesize the existing evidence into the best possible behavior at a given point in time (cf. Smith, 1976). Consequently, people should behave like "lay scientists" to gather evidence to satisfy their epistemic needs. In line with this view, expert voices do carry a lot of weight when it comes to changing attitudes and behavior (e.g., Pornpitakpan, 2004). In reality, however, people often do not behave in this way. For example, in a recent survey, half of the participants indicated that they did not believe in COVID-19 information that was on public record (Hornsey, 2020).

Why do people commonly disregard expert information, even when this potentially puts them in harm's way? One explanation is that the goal of establishing and maintaining one's social identity can take precedence over epistemic goals to be right (Hornsey & Fielding, 2017; Van Bavel & Pereira, 2018). People tend to disregard convincing evidence and instead believe in conspiracies when they feel threatened by a powerful outgroup (van Prooijen & van Vugt, 2018) or lacking control regarding the political system (Bruder et al., 2013). During the COVID-19 pandemic, governments and media-outlet alike turned to scientists to shed light on the emerging situation, putting the scientific process in the public spotlight. While this process helps the epistemic goal, it may estrange those on the fringes of society. People believing in conspiracy theories are outcasts adhering to the abstract belief that the world is a dangerous place (Moulding et al., 2016). Consequently, the unified reliance on science by the majority should make them especially prone to disregard scientific evidence.

There is some evidence that social identity threats may motivate disregarding scientific evidence. People who were highly identified as "gamers" were also most likely to discredit scientific evidence regarding the harmful effects of gaming (Nauroth et al., 2014, 2015) and participants strategically disregarded scientific evidence that threatened their group (Nauroth et al., 2017). Such anti-science attitudes may be rooted in the need to stand out individually as well as differentiating one's ingroup from outgroups (Hornsey & Fielding, 2017). In sum, the need to establish and defend one's social identity seems to motivate the rejection of science.

Expressed Outgroup Identity Motivates Collective Defensiveness

Assuming that social identity threats may motivate science rejection, responses to science communication should depend on the communicated social identity of the source. When it comes to delivering critical messages, the social identity of the messenger may determine how threatening this message is. A substantial body of research indicates that group members are highly threatened by criticism from an outgroup member, but tolerate the same criticism by a fellow ingroup member (intergroup sensitivity effect [ISE]; Hornsey, 2005; Hornsey & Esposo, 2009). The ISE emerges,

because group members typically attribute hostile intentions to outgroup critics, but not to ingroup critics (Hornsey et al., 2004, 2008), at least when ingroup critics are highly invested in the group (Hornsey et al., 2004). As a result, group members perceive ingroup criticism as a suggestion, but they perceive outgroup criticism as a threat to the group identity (Ariyanto et al., 2010; de Hoog, 2013, Study 1; see also Elder et al., 2005; Morier et al., 2013).

Importantly, not only the commenter's actual identity but even the expressed group membership of the commenter may elicit the ISE. Hornsey et al. (2004, Experiment 2) observed that critical outgroup members (Asian-Australians) using inclusive language ("we") were evaluated similarly generously as critical ingroup members (Anglo-Australians). Only those outgroup members who highlighted their diverging group membership using exclusive language ("they") elicited significant defensiveness. This implies that communicators should place themselves into a shared superordinate group (e.g., the general public) instead of highlighting their unique group membership (e.g., scientist or celebrity).

Our argument regarding group membership and behavioral intentions has a major weakness so far, namely, that this classic body of research is primarily based on self-report evaluations. One may therefore argue that existing research does not say much about costly behavior or intentions, such as ignoring scientific advice. However, recent research consistently indicates that group members show a behavioral ISE. Thürmer and McCrea (2018) observed that group members paid to punish critical outgroup comments, excluded outgroup commenters from a subject pool, and rejected ultimatum bargaining offers from outgroup commenters, compared with ingroup commenters voicing the same criticism. Decisions were incentivized, indicating that intergroup sensitivity motivated defensive behaviors that were costly to the participant (i.e., participants sacrificed their monetary bonus). Moreover, Thürmer et al. (2019) observed that group members spent their time counter-arguing outgroup criticism instead of completing their individual work, even when their individual work was intrinsically rewarding (i.e., evaluating funny video clips). A recent preregistered, large-scale replication confirmed the behavioral ISE (Thürmer & McCrea, 2021a). Apparently, outgroup criticism motivates people to engage in costly defensive behaviors. Regarding the COVID-19 pandemic, this research indicates that expressing a joint group membership is key when it comes to communicating behavioral advice to the general public. While communicating a joint group membership ("we") should increase adherence to critical advice, communicating a different group membership ("you") should lead to defensively rejecting advice, even if this entails personal costs such as the risk of getting sick.

To the best of our knowledge, no research has investigated the joint impact of expertise and expressed identity on behavioral intentions. However, Fielding et al. (2020) observed that ingroup messengers were more convincing with regard to climate change attitudes, especially when they referred to important group values (review by Hornsey & Fielding, 2020). With regard to the current COVID-19 pandemic, existing research thus suggests that expertise and expressed group membership may be key to increase compliance with public health messages.

The Present Research

The current preregistered and high-powered study investigates the role of expertise and professional identity on the intention to comply

with recommended health behaviors. In the study, we presented U.S.-American participants with criticism regarding their COVID-19-related health behavior, saying that people in the U.S. are behaving recklessly (e.g., fail to wash their hands properly, still have too much social contact). We attributed this critical comment to an expert (scientist) or a nonexpert (radio host). Moreover, the comment source either identified as a person from the general public (i.e., used inclusive language, “we”) or identified as an outsider (i.e., used exclusive language, “they”). In line with past research on intergroup criticism, we assessed how constructive and threatening participants evaluated the message and, as our main dependent measures, peoples’ intention to comply with the health behaviors recommended at the time (e.g., avoiding large gatherings) and agreement that COVID-19-related health behavior of the public has been inadequate.

Method

Participants and Design

Sample size was determined a-priori by a power analysis using G*power 3.1 (Faul et al., 2007, 2009), setting $1-\beta = .95$ and $\alpha = .05$. As recommended by Funder et al. (2014), we assumed a small-to-medium effect of $f = .15$. Such an effect also provides a conservative estimate of the self-report effects observed in similar past ISE research (Thürmer & McCrea, 2018, 2021a). The analysis resulted in a minimum sample size of $N = 600$ for the main effect; to account for potential dropouts (see below), we aimed to recruit at least 700 participants. This sample size is also sufficient to explore potential mediations, again assuming medium effect sizes (Fritz & Mackinnon, 2007). Participants were randomly assigned to one of the four conditions in a 2 Source Expertise (scientist vs. talk show host) $\times$ 2 Language Inclusiveness (addressing them vs. us) between subjects design. We collected data between March 20 and March 23, 2020.

Materials and Procedure

All measures were presented in a web-based survey. Participants were told that we were interested in people’s response to messages about the spread of COVID-19 and presented an alleged excerpt from a recent interview. The source was either presented as a scientist (Allport, an epidemiologist at John Hopkins) or a public figure (James Allport, a popular radio personality). The comment was critical of Americans’ COVID-19-related health behaviors and either used identity inclusive (“we”) or exclusive (“they”) language. The comment read (exclusive language in brackets):

Americans are frankly being reckless and idiotic in their response to the outbreak. You see videos of people on the beach or in the bars, shaking hands. Most of us (Most people) still don’t bother washing our (their) hands, we (they) touch our (their) face, and some of us (some) even still cover our (their) coughs with our (their) palms. We (They) are going to spread the virus even more. We (They) are going to infect more people who are going to get very sick, and maybe die as a result. I just don’t understand why we (they) are being so careless.

Participants then indicated the occupation of the commenter (Epidemiologist, Radio personality, Politician, or Lawyer), as a manipulation check, and gave a brief written response to the comment. Participants then rated message motive (3 items: To what extent do you think ... the comments were constructive; ... the person who wrote these comments cares about the U.S.; ... the comments were

made in America’s best interest?), message threat (8 items: To what extent do you think this comment is: threatening, disappointing, irritating, offensive, insulting, hypocritical, judgmental, and arrogant), and the expertise of the commenter, 3 items: To what extent do you think: The person who made this comment knows a lot about the Corona virus, The person who made this comment is not very smart [reverse coded], The person who made this comment has no idea about the Corona virus and its consequences [reverse coded]. Message motive and message threat scales were adapted from Hornsey and Imani (2004). After rating the comment and the commenter, participants indicated their commitment to follow COVID-19 health recommendations (5 items: I personally intend to: Avoid large gatherings, Wash my hands frequently, Stay away from others if I feel sick, Try to cover any coughs using my armpit, Avoid touching my face), as our primary dependent measure, and their perception of the inadequacy of the public response (4 items: To what extent do you agree that people in the U.S.: Are not taking the virus seriously enough, Should do more to prevent further infections, Need to listen to the recommendations of experts, Need to listen to the recommendations of elected officials). All scales were answered on 7-point scales (1 = *not at all* to 7 = *extremely*). Finally, participants indicated their political orientation (1 = *Very liberal* to 5 = *Very conservative*), their trust in science, and their trust in medical doctors as exploratory moderators (both 1 = *not at all* to 7 = *extremely*), and wrote what they thought that the study was about, and were debriefed. The debriefing included a brief statement about the importance of following health advice and a link to the official World Health Organization (WHO) recommendations.

Results

Participant Exclusions

Seven-hundred-and-seventy-five participants completed the survey. Failure to identify the occupation of the source lead to exclusion from analyses ($n = 161$). We, moreover, observed that multiple responses were submitted from the same IP address and/or within 60 s of entering the survey, raising suspicion about their authenticity, and leading us to exclude them ($n = 81$). We also planned to exclude anyone who answered all ratings on a page with the same response or faster/slower than ± 3 standard deviations from the mean as inattentive ($n = 11$). One person chose to abort the questionnaire. $N = 521$ participants remained for analyses. Although somewhat smaller than planned, this sample provides a high power to detect a medium-sized effect.

Data Handling

According to the request by an anonymous reviewer, we followed the recommendations by Hayes and Coutts (2020) and determined the reliability of all scales using McDonald’s ω using the MBESS package (Kelley, 2007). We planned to drop items from each scale if (a) reliabilities are below .8 and (b) removing the respective item improves scale reliability. Reliabilities were satisfactory and we computed scale scores by averaging the respective items for message motive ($\omega = .784$), message threat ($\omega = .944$), commenter expertise ($\omega = .884$), commitment to follow COVID-19 health recommendations ($\omega = .765$), perceived inadequacy of the public response ($\omega = .683$), and trust in with scientific medicine ($\omega = .840$). Removing items did not substantially improve reliabilities and we therefore included all items.

Registered Analyses

We conducted 2×2 ANOVAs on each of the combined measures. We expected the message phrased as coming from an ingroup source ("we"), compared to outgroup source ("they"), would lead to more positive responses to the message, more positive behavioral intentions, and more agreement that the public response has been inadequate. We expected that an expert source (epidemiologist vs. radio personality) would lead to more positive responses to the message, more positive behavioral intentions, and more agreement that the public response has been inadequate. We expected this difference to be more pronounced when using inclusive language. Plots of the manipulation check, moderators, and dependent measures are shown in Figure 1.

Our expertise manipulation had the expected main effect on the self-report measure of commenter expertise, $F(1, 517) = 23.903$, $p < .001$, $\eta^2 = 0.04$, 90% CI [0.02, 0.08], and we neither observed a main effect of language inclusiveness $F(1, 517) = 1.903$, $p = .168$, nor an Expertise $\times$ Inclusiveness interaction, $F(1, 517) = 0.027$, $p = .870$. However, violin plots with boxplots indicated that participants showed considerable variance in their expertise ratings of the talk show host (Figure 1). No unexpected effects of our manipulations on participant trust in scientific medicine, $F_s(1, 517) < 2.400$, $p_s > .120$, or political orientation emerged, $F_s(1, 517) < 1.100$, $p_s > .300$ (Figure 1). All in all, our manipulation was successful.

Regarding message motive, we did not observe any main effects or interactions, expertise, $F(1, 517) = 0.487$, $p = .486$, inclusiveness $F(1, 517) = 2.917$, $p = .088$, $\eta^2 = 0.006$, 90% CI [0.00, 0.02], Expertise $\times$ Inclusiveness $F(1, 517) = 3.229$, $p = .073$, $\eta^2 = 0.006$, 90% CI [0.00, 0.02]. However, post-hoc comparisons indicated that scientists were rated to be more constructive when they used inclusive rather than exclusive language, $t(517) = 2.479$, $p = 0.014$, partly supporting our hypotheses. All other comparisons were nonsignificant, $p_s > .075$.

Regarding message threat, messages by scientists were rated to be more threatening than messages by radio show host, $F(1, 517) = 5.531$, $p = .019$, $\eta^2 = 0.01$, 90% CI [0.00, 0.03]. Neither an effect of language inclusiveness $F(1, 517) = 1.739$, $p = .188$, nor an Expertise $\times$ Inclusiveness interaction emerged, $F(1, 517) = 0.381$, $p = .537$.

Contrary to our predictions, we did not observe any effects of our manipulations on participants' reported intention to follow proscribed guidelines, expertise, $F(1, 517) = 0.090$, $p = .764$, inclusiveness, $F(1, 517) = 0.169$, $p = .682$, Expertise $\times$ Inclusiveness $F(1, 517) = 0.027$, $p = .869$, or the perceived inadequacy of the U.S. public's response, expertise $F(1, 517) = 0.951$, $p = .330$, inclusiveness $F(1, 517) = 0.058$, $p = .810$, Expertise $\times$ Inclusiveness $F(1, 517) = 2.262$, $p = .133$.

Exploratory Moderation Analyses

We conducted exploratory Johnson-Neyman analyses to determine if political ideology or trust in scientific medicine moderate the observed effects of expertise and inclusiveness on the outcome measures. Only participants who identified as moderate or conservative (response option 2.15 or higher), but not those who identified as (very) liberal, perceived the message by a scientist to be more threatening than the message by a talk show host. The effects on message motive, intention to follow guidelines or inadequacy of the public response remained nonsignificant across political ideology.

The predicted Expertise $\times$ Inclusiveness interaction on message motive was only significant for those with a very high trust in

scientific medicine (5.88 and above) and in the opposite direction from the rest of the sample (i.e., inclusive scientist messages and exclusive talk show-host messages were judged to be less constructive than exclusive scientist messages and inclusive talk show-host messages). The main effect of language inclusiveness was only significant for those reporting low-to-moderate trust in scientific medicine [-3.54, 5.76], indicating that those participants actually perceived inclusive messages to be *less* constructive than exclusive messages. The effect of expertise on threat was only significant for participants with moderately high trust in science [4.03, 6.51], indicating that messages from scientists were more threatening. Finally, the effects on intention to follow guidelines or inadequacy of the public response remained nonsignificant across levels of trust in scientific medicine.

Exploratory Mediation Analyses

We next turned to exploratory mediation analyses. A correlation plot (Figure 2) revealed that our two potential mediators, message motive and message threat, were both significantly correlated with our primary dependent measures. However, while message motive was positively related to intention to comply and perceived inadequacy of the public response, message threat had negative relations with these variables. We thus devised two independent paths from our manipulations to the respective outcome measure, one via message threat and one via message motive (Figure 3).

We tested our mediation models using structural equation modeling in the lavaan package (Rosseel, 2012) using robust standard errors. Initial analyses showed unsatisfactory model fits (Hu & Bentler, 1999), CFI $< .80$, potentially due to the heterogeneity of participants' interpretation of our manipulation of scientist vs. talk-show host. We thus included the measure of expertise instead of our manipulation into our model and calculated the according interaction term. We first included the intention to comply with recommended health behaviors as our dependent variable. Expertise significantly predicted message motive, $B = .232$, $SE = .038$, $p < .001$, as well as message threat, $B = -.818$, $SE = .041$, $p < .001$. Message motive then predicted intention to comply, $B = .087$, $SE = .033$, $p = .009$, and the indirect path from expertise on intention via motive was significant, $B = .020$, $SE = .008$, $p = .010$. The effect of threat on intention was in the opposite direction but not significant, $B = -.041$, $SE = .026$, $p = .110$, and the indirect path via threat failed to attain significance, $B = .034$, $SE = .021$, $p = .107$. The model fit was excellent, SRMR = .010, CFI = .997, RMSEA = 0.050, 90% CI [0.000, 0.139].

Parallel analyses including perceived inadequacy of the public response yielded parallel results. Expertise significantly predicted message motive, $B = .232$, $SE = .038$, $p < .001$, as well as message threat, $B = -.818$, $SE = .041$, $p < .001$. Message motive then predicted intention to comply, $B = .087$, $SE = .033$, $p = .009$, and the indirect path from expertise on inadequacy of the public response via motive was significant, $B = .074$, $SE = .015$, $p < .001$. The effect of threat on public response was in the opposite direction but not significant, $B = -.043$, $SE = .031$, $p = .170$, and the indirect path via threat failed to attain significance, $B = .035$, $SE = .025$, $p = .169$. The model fit was again excellent, SRMR = .011, CFI = .997, RMSEA = 0.050, 90% CI [0.000, 0.139].

Figure 1*Violin Plots With Boxplots of the Manipulation Check, Moderators, and Dependent Measures* *Note.* Whiskers represent 95% CIs.

Figure 2
Correlation Plot of Dependent Variables and Co-Variates

Discussion

Effective pandemic response depends on efficient communication of behavior change advice. We argued that people may not follow scientists' advice, because they perceive scientists to be members of another group (outgroup). Based on research on group criticism, we argued that this may particularly be the case when scientist use social identity exclusive language (you, they) instead of social identity inclusive language (we, us).

Overall, support for our registered analyses was weak. We observed no effects of our manipulations on intentions to follow recommended health behaviors or the perceived (in)adequacy of the public response. While we did not observe the expected interaction on message motive, scientists using inclusive language were perceived as being more constructive than scientists using exclusive language. All other comparisons on message motive were not significant, which may be an indication that people are more sensitive to scientists' group membership than public figures' group membership. Messages by scientists were rated as being more threatening, although this main effect was independent of language inclusiveness.

Trust in scientific medicine was consistently related to lower threat and higher motive ratings as well as behavioral intentions and inadequacy of the public responses (see correlations in Figure 2). Exploratory moderation analyses showed that those low in trust in science did exhibit a Language inclusiveness $\times$ Expertise interaction,

albeit in a different form than predicted. In this subgroup, inclusive messages were actually rated to be less constructive. Assuming that this group identifies very little with scientists, an effort to signify a common identity could be perceived as insincere thus leading to rejection. The effect of expertise on threat was significant only for those high in trust in medicine. This may indicate that only those who believe in science will take scientific warnings seriously. If so, feelings of threat would not only lead to defensiveness, but could also be a prerequisite for effective messaging.

Political orientation was only related to threat ratings and not with the other outcome measures (see correlations in Figure 2). Exploratory moderation analyses showed that participants who identified as very liberal did not rate scientists' messages as more threatening than talk-show-host messages. No other moderation effects of political orientation emerged. Thus, in our sample, political orientation had a relatively weak direct impact on message reception. It should be noted that trust in scientific medicine and political orientation were negatively related, potentially indicating an indirect effect.

Our mediation analyses showed an indirect impact of rated expertise ratings on intentions and perceived inadequacy of the public response. While motive ratings had a positive and significant impact on intentions to comply and perceived inadequacy of the public response, threat ratings had a nonsignificant negative impact. We did not observe a consistent impact of message inclusiveness.

Figure 3
Results of SEM Analyses

Note. Grey paths are not significant at $p < .05$.

Limitations

All in all, our predictions received relatively weak support. Potential reasons include the strength of our language manipulation, participants' interpretation of our expertise manipulation, and the timing of data collection. First, our language inclusiveness manipulation was rather subtle, with the only difference being a "we" vs. a "they" framing. Although past research has observed an effect of such manipulations (Hornsey et al., 2004), it may not suffice to produce consistent effects in our experimental setting where the message sources belonged to a salient superordinate groups (Americans). Future research could additionally use medical terms rather than plain language as a stronger signifier of medical group membership, or even group directed-action to underline their disapproval (e.g., Marinthe et al., 2021).

Second, our expertise manipulation used an epidemiologist vs. a talkshow host. Although we do observe an overall effect of this manipulation on rated expertise, a substantial subgroup of participants ascribed equally high expertise to the talk-show host and the epidemiologist (Figure 1). This may have reduced the effect of our manipulation. Moreover, rated expertise was positively related to constructiveness, potentially indicating that experts are not viewed as an outgroup. Alternatively, social identity may not play a primary role in our setting. Based on their profession, both doctors and talk-show hosts may be granted the right to criticize during a pandemic. Some researchers have argued that the ISE is in fact driven by a violation of conversational norms (Sutton et al., 2006, 2008), and a recent large-scale registered report provides partial support for this perspective (Thürmer & McCrea, 2021a). If so, a norm granting

doctors and talk-show hosts the right to criticize should reduce or eliminate the effect of expressed group membership on defensiveness (i.e., the ISE). Partially in line with this hypothesis, recent research has observed a reduced ISE when criticism targets competence rather than morality (Rösler et al., 2021).

Finally, participants mostly intended to follow recommended health behaviors and the perceived the public response to be inadequate, potentially pointing to a ceiling effect. At the time of data collection, support for the public response was generally high, and only later declined in substantial parts of the population (Saad, 2020). It is therefore possible that the direct effects of our manipulations would have emerged with more variance in the dependent measures or at a later point in time.

Implications

Our research relates to classic and recent research on health and risk communication (Calman & Curtis, 2010; Coleman, 1993). Directly related to the pandemic, research on health anxiety indicates highly anxious people may exhibit mal-adaptive behaviors, such as hoarding and excessive hand-washing (Asmundson & Taylor, 2020). Our research is partly in line with this claim. Threat perceptions had consistent negative zero-order correlations with the intention to comply with recommendations and the perceived inadequacy of the public response. However, in our mediational models, which partial out the effect of the other variables in the model, threat perceptions did not show a consistent impact on these outcomes.

With regard to the framing of the message, our findings indicate that mass media may be relatively well-equipped to deliver health messages. Our weak findings regarding message source and language inclusiveness indicate a high message effectiveness across conditions. However, the outcome measures showed consistent positive correlations with message motive, and this effect held consistently in our mediational model. This suggests that media-messages should aim to reduce threat and make sure to convey their benevolent intention, as should those who participate in public debate (Adelman & Verkuyten, 2020). In line with this claim, recent research observed a reduced ISE in an organizational setting when the outgroup expressed benevolent intentions (Liang et al., 2021). In addition, more specific COVID-related emotions, such as fear, rage, sadness, or boredom, may play a more prominent role (e.g., Carstensen et al., 2020; Wolff et al., 2020).

Finally, our analyses indicate that trust in scientific medicine plays a key role in message effectiveness. Political partisanship had a much weaker impact, although both variables were related. This suggests that mass media communication on COVID should focus on increasing trust in scientific medicine rather than trying to bridge a partisan divide regarding the issue.

Conclusion

This registered report allowed for a critical test of a theoretically convincing yet disheartening idea, namely, that the mere linguistic indication of another group membership may reduce the effectiveness of mass-media messages. Our data did not support this assumption, which is good news for our society in general and mass-media in particular. We need the help of scientists and talk-show hosts alike to promote an effective pandemic response. At the same time, mass-media should promote trust in the accomplishments of scientific medicine and make their intention very clear: We are all in this together and are trying to help.

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