Research article

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The effects of personality and political affiliation on covid-19 conspiracy beliefs, perceived threat & belief in mitigation efforts

Abstract

The COVID-19 pandemic in 2020 revealed a plethora of public health failings, and left the world with questions of how to effectively protect the self and others. A contributing factor to this failure was misinformation and conspiracy theories. This study sought to investigate how political affiliation interacted with the personality traits of agency and communion when predicting belief in conspiracy theories, perceived threat from the pandemic, and the efficacy of mitigation efforts during the pandemic. Participants (*n* =448) were widely recruited to be representative of the general population. Results generally indicated that those who identified as Republican tended to believe more in conspiracy theories, perceive that the pandemic posed less of a threat, and that mitigation efforts were less useful than their Democrat counterparts. Agency and communion interacted to predict conspiracy beliefs and perceived threat for Republicans but not for Democrats. Implications of these results are discussed.

Keywords: political affiliation, conspiracy, covid-19, agency, communion, personality, perceived threat, health

Laura Mendoza, Alexander Nagurney
Department of Psychology, University of Hawaii at Hilo, USA

Correspondence: Alexander Nagurney, Department of Psychology, University of Hawaii at Hilo, 200 West Kawili St., Hilo, HI 96720, USA, Tel 480-385-9951, Fax 808-932-7096, Email nagurney@hawaii.edu

Introduction

The effects of agentic and communal traits and political affiliation on covid-19 conspiracy beliefs

The COVID-19 pandemic exposed the vulnerability of global health. The pandemic had disastrous results on public health, in large part due to the lack of consistent and reliable public health information. In a vacuum of information, conspiracy theories are a quick fix to satisfy the need for cognitive closure.[1,2] It was found that the largest purveyor of misinformation during the pandemic was Donald Trump, the President of the United States and head of the Republican Party.[3] As media outlets reported what he said, conspiracy theories quickly spread online and through social groups.

Many common guidelines given by the CDC (Centers for Disease Control) were not adhered to and consequently affected public health. COVID-19 behaviors were driven and mediated by political affiliation more than any other factors whether it be state health policies, county infections per capita, or age.[4] There are biological reasons we may see this consistent difference. Differences based upon political affiliation can be seen in brain structures. For example, conservatives have more gray matter volume and activity located in their right amygdala, known for fear and threat reactivity, whereas Liberals have more gray matter volume in their anterior cingulate cortex, known for its role in emotion regulation.[5,6] The practical application is that Conservatives may be less inclined to process ambiguous information concerning the pandemic than Liberals, thus making the previously-mentioned relief provided by conspiracy theories particularly poignant for Republicans. This could have affected how personality traits motivated some towards or away from certain health behaviors.

Agentic/communal traits and interpersonal and health-related outcomes

Nagurney et al.[7] found that agency, a focus on the self and creating separations, worked as a protective measure against conspiracy belief during the pandemic. However, Korlat and colleagues[8] would suggest that it was higher levels of communion, a focus on others and creating connections that yielded socially responsible pandemic health behaviors. These two studies are not necessarily in conflict. Helgeson[9] demonstrated that both agency and communion are related to health behaviors but different consequences; levels of agency in an individual affect physical and mental health, and the level of communion traits affect health outcomes via relationships. The absence of one or another produces negative health outcomes.[10] According to the seminal work of Bakan,[11] together, these two personality traits mitigate one another, and the balance of these traits in an individual should result in health and well-being for the individual and their relationships.

Agency has a host of positive health benefits that could have helped influence important outcomes during the pandemic, for example reduced anxiety[9,12–15] and reduced depression.[12,15] Communion also has many health outcomes, specifically in health seeking behavior.[9] Having traits that are high in communion indicate more perception and mobilization of social support.[16] These two traits could have had a protective impact on health during the COVID-19 pandemic, especially when considered together.

Agency and communion are interrelated when it comes to relationship health, which was particularly important during the pandemic. Agency can look like being sporty and courageous,[8] independent, assertive, and also embedded in a social network.[17] Healthy levels of agency, while fostering a focus on the self, does leave open the possibility of also fostering interpersonal relationships, given its positive correlation with extraversion.[10] With communion's emphasis on others, it is also focused on the common emotionality of others through sympathy, empathy and is predictive of socially responsible behavior.[8] However, what would happen if one's social network was oriented around misinformation and conspiracy theories? Would we then see negative health outcomes?

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Political affiliation

Outside the Nagurney et al.[7] and Korlat et al.[8] studies, there was less research into the personality variables that contributed to detrimental COVID-19 beliefs and behaviors, but there is a wealth of post COVID-19 studies reporting that a strong predictor of conspiracy belief was political affiliation. Identifying as conservative and/or Republican predicted less adherence to social distancing, vaccination, and masking behaviors during the COVID-19 pandemic than identifying as liberal or Democratic.[18]

Romer & Jamieson[19] found that conspiracy beliefs predicted more unwillingness to participate in preventative, prosocial health behaviors and vaccination, especially during the COVID-19 pandemic, and this lack of trust in the safety of the vaccine resulted in vaccine hesitancy. To a greater extent than Liberals, Conservatives and those who sought out conservative media demonstrated higher levels of conspiracy belief. This conspiracy belief had detrimental results. This conspiracy belief negatively correlated with perceived threat, preventive actions like wearing a face mask, believing the vaccine is safe and desiring to get one. These beliefs did not change as knowledge regarding COVID-19 was updated over the course of the pandemic if one held conspiracy beliefs.[19]

Smallpage and Enders[20] hypothesized that belief in conspiracy theory would change depending on whether one's own political party is implicated or served by a particular theory. However, their study found that in the void of information, Republican's conspiracy belief was still statistically significant, even when their own party was implicated. In other words, Conservative's tendency towards conspiracy belief is so strong that it can overcome ingroup bias. Of particular note, this study was published before the pandemic. During the pandemic, Conservatives dominated spreading misinformation and conspiracy theories on Twitter.[21]

This pattern was not only significant in the United States of America, but across cultures conservative ideology has been associated with conspiracy belief.[22] Conservatism has been shown to not only predict conspiracy belief, but also the reduced ability to discern between real and fake news headlines, or accurate COVID-19 knowledge.[23] Republican and conservative media have also been demonstrated to increase conspiracy belief.[24,25]

Hypotheses

This study sought to understand if agency and communion would interact with each other to predict conspiracy belief, belief in the efficacy of mitigation efforts, and perceived threat that COVID-19 posed to the self and others. Political affiliation was also explored as a predictor and potential moderator variable of the relationship between agency and communion when predicting these outcomes.

Hypothesis 1a- The balance of agency and communion are traits on a spectrum and they mitigate each other for optimal health.[10] This study predicted that the best health outcomes (highest belief in efficacy of mitigation efforts, highest belief in perceived threat, and the lowest amount of conspiracy belief) would be found in the participants who scored relatively high in both agency and communion, referred to here as the integrated group.

Hypothesis 1b- Since the lack of both agency and communion in an individual leaves them undifferentiated,[26] this study predicted that the worst health outcomes (lowest belief in efficacy of mitigation efforts, lowest belief in perceived threat, and the highest amount of conspiracy belief) would be found in participants who scored relatively low in

both agency and communion, now referred to as the undifferentiated group.

Hypothesis 2- This study hypothesized that a difference would be seen in belief outcomes based on political affiliation. Democrats should have higher rates of belief in mitigation and perceived threat. Republicans should have higher rates of conspiracy belief.

Exploratory analysis- Political affiliation (Democrat versus Republican) was explored as a potential moderator of the previously-stated relationship between agency and communion when predicting one's beliefs concerning conspiracy, mitigation efforts, and perceived threat.

Method

Participants and procedure

Participants were recruited widely through emails, social media posts, class recruitment, and a website named Qualtrics. Student participants received minor compensation in the form of extra credit. Qualtrics participants received a dollar compensation. Participants were not informed of the hypotheses of the study. Ages of the participants ($n = 448$) covered a range of 18 to 82, with the mean age of 39.78 years (SD = 16.24 years). 57% of participants identified as female ($n = 243$), 37% as male ($n = 158$), and 4% as non-binary ($n = 15$). For the category of race, 57% ($n = 257$) of respondents were White, 7% were Black ($n = 31$), 6% were Asian ($n = 25$), and Native Hawaiian or Pacific Islanders made up 13% ($n = 59$). Mixed race accounted for the remaining 5% of respondents ($n = 22$). In terms of ethnicity, 10% of those surveyed identified as Hispanic ($n = 45$).

Potential participants were sent a link to the survey through email, social media posts, and through Qualtrics. In order to increase the diversity of the sample, participants were requested to share the survey with one other person. Responses were collected using Google Forms and Qualtrics, voluntarily and anonymously. Participants could skip any questions they were uncomfortable answering, and they could end their participation at any time. Data was analyzed using the Statistical Package for Social Sciences (SPSS, version 29).

Instruments

The survey included several sections: COVID-19 beliefs, the agency and communion subscales from the Personal Attributes Questionnaire,[27] and demographics.

COVID-19 beliefs: A full description of the questions posed to participants regarding their beliefs about COVID-19 can be found in Nagurney et al.[7] where the scales discussed here were originally validated. All items were rated on a scale from 1 (strongly disagree) to 5 (strongly agree) with the midpoint of 3 being neutral.

Belief in mitigation efforts: The belief in mitigation efforts scale was composed of 9 items that were averaged together to form a composite score. Example items were, "Wearing a mask in public can help prevent or reduce the spread of COVID-19," and "Limiting the group size of gatherings can help prevent or reduce the spread of COVID-19." Cronbach's alpha was .95, demonstrating excellent internal consistency.

Belief in threat: The belief in threat factor was composed of 8 items that were averaged together to form a composite score. An example item was, "I am or have been worried that being around other people could potentially expose me to COVID-19." One item, "I am or have been worried that getting extremely ill with COVID-19 would put

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significant emotional, financial, time-related, and/or occupational strain on my family, friends, roommates, and/or coworkers," was excluded from the original scale in the current study because this item was deemed too multifaceted to be meaningful. Cronbach's alpha for the remaining 8 items was .92, demonstrating excellent internal consistency.

Belief in conspiracy theory: One's belief in conspiracy theory was assessed using two items that were averaged together to form a composite score: "The COVID-19 vaccines contain 5G Nano-chips to control people," and "COVID-19 and its vaccines have been created to control the world population." These items were highly correlated, $r(444) = .57$, $p < .001$.

Agency and communion: Agency and communion were assessed using the PAQ, a commonly-used and well-validated scale for assessing these traits. Each scale is composed of eight items that were averaged to form a composite. Cronbach's alphas were .70 for agency and .80 for communion. These represent acceptable reliabilities.

Demographics: Participants were asked to provide their age (in years), gender (options were female, male, non-binary, or other), race (options were White, Black/African American, American Indian/Alaska Native, Asian, Native Hawaiian/other Pacific Islander - select all that apply), ethnicity (Hispanic/Latiné or not), and political affiliation (republican or democrat).

Results

In order to test the hypotheses that integrated individuals (those high in both agency and communion) would demonstrate the most favorable outcomes in the current study whereas undifferentiated individuals (those low in both agency and communion) would demonstrate the least favorable outcomes, both agency and communion where divided into high and low groups based on median splits. Those at or above the median of 3.50 for agency were placed in the high agency group ($n = 232$), whereas those below the median of 3.50 were placed in the low agency group ($n = 216$). Similarly, those at or above the median of 3.88 for communion were placed in the high communion group ($n = 239$), whereas those below the median of 3.88 were placed in the low communion group ($n = 209$). Together, this resulted in 120 participants being classified as integrated, 97 as undifferentiated, 119 with low agency and high communion, and 112 as low communion and high agency.

Main analyses

Overall three-way interaction: A multivariate analysis of variance (MANOVA) was computed using the split agency and communion variables as independent variables and the various outcomes of interest (belief in conspiracy theories, belief in mitigation efforts, and perceived threat) as dependent variables. Political affiliation (Democrat or Republican) was also included as a third independent variable in order to test for its potential moderating effect.

The MANOVA demonstrated a highly significant three-way interaction between agency, communion, and political affiliation, $F(3, 290) = 5.63$, $p < .001$. This overall effect was driven by the three-way interactions involving the conspiracy belief, $F(1, 292) = 9.38$, $p = .002$, and perceived threat, $F(1, 292) = 4.95$, $p = .027$, variables. None of the two-way or three-way interactions predicting belief in mitigation efforts were significant (all ps > .10), however there were main effects for both communion, $F(1, 292) = 4.92$, $p = .027$, and political affiliation, $F(1, 292) = 166.89$, $p < .001$, when predicting this variable. Those who were low on communion were less likely to

believe in mitigation efforts ($M = 3.74$, $SD = 1.21$) than those higher in communion ($M = 4.20$, $SD = .98$). Republicans were also less likely to believe in these efforts ($M = 2.76$, $SD = 1.29$) than Democrats ($M = 4.39$, $SD = .67$). In order to probe the source of the significant three-way interactions, the component two-way interaction between agency and communion was analyzed separately based on political affiliation.

Republicans: A MANOVA was again computed using the split agency and communion variables as independent variables and the two significant outcomes of interest (belief in conspiracy theories and perceived threat) as dependent variables. For Republicans, this follow-up MANOVA demonstrated a highly significant two-way interaction between agency and communion, $F(2, 76) = 6.64$, $p = .002$. This overall effect was driven by a significant two-way interaction for conspiracy belief, $F(1, 77) = 9.53$, $p = .003$, and a marginally significant interaction for perceived threat, $F(1, 77) = 3.44$, $p = .068$.
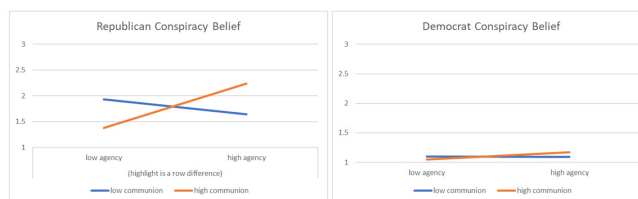

Figure 1 Political affiliation by agency by communion interaction predicting conspiracy beliefs.

In order to further probe the source of this two-way interaction, the effect of communion on these outcomes for Republican participants was analyzed separately based on whether they were low or high on agency. For the low agency group, those who were low on communion ($M = 1.93$, $SD = .77$) were more likely to believe in conspiracy-related ideas than those who were high on communion ($M = 1.38$, $SD = .61$), $F(1, 30) = 4.48$, $p = .043$. No such difference emerged for perceived threat, $F(1, 30) = .44$, $p > .05$. For the high agency group, those who were low on communion ($M = 1.64$, $SD = .85$) were less likely to believe in conspiracy-related ideas than those who were high on communion ($M = 2.24$, $SD = .85$), $F(1, 47) = 5.92$, $p = .019$. Those who were low on communion ($M = 2.47$, $SD = 1.16$) also rated perceived threat as lower than those who were high on communion ($M = 3.23$, $SD = 1.31$), $F(1, 30) = 4.55$, $p = .038$. See Figure 1 for a graphical depiction of the conspiracy belief interaction and Figure 2 for a graphical depiction of the perceived threat interaction.
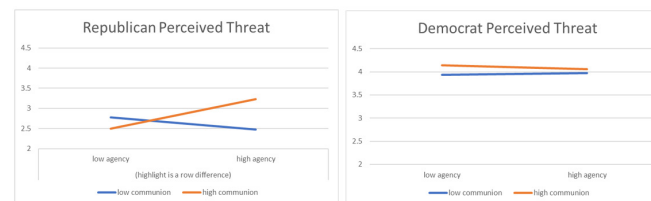

Figure 2 Political affiliation by agency by communion interaction predicting perceived threat.

Taken together, the results for the Republicans demonstrate that the undifferentiated (low communion and low agency) and integrated (high communion and high agency) groups appear to be more prone to believing in conspiracy theories than the groups that lean towards having either primarily agentic or communal traits. It also appears that the integrated group was also the most likely to perceive COVID-19 as posing a threat.

Democrats: The corresponding MANOVA examining the agency by communion interaction when predicting conspiracy beliefs and perceived threat for Democrats was non-significant, $F(2, 226) = 0.73$,

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p > .05, indicating that the source of the original three-way interaction lies solely with the Republican group (Figure 1 and 2).

Discussion

Summary of findings

It was hypothesized that the best health outcomes, i.e. higher belief in efficacy of mitigation efforts, higher belief in perceived threat, and the lower amount of conspiracy belief would be found in the integrated group (high in both agency and communion), and the opposite, the worst health outcomes, would be found in the undifferentiated group (low in both agency and communion). The results demonstrated mixed support for these hypotheses. The interaction between agency and communion does seem to predict several outcomes (i.e. conspiracy belief and perceived threat) for Republicans, but not for Democrats, who generally demonstrated healthier beliefs for these outcomes regardless of their levels of agency and communion. For Republicans, both the undifferentiated and integrated groups were more inclined towards conspiracy belief. This pattern was as hypothesized for the undifferentiated group, but was counter to the prediction for the integrated group. One possibility for this unexpected finding for the integrated group is that the relatively high levels of agency and communion represented in this group were at odds with each other without one being able to mitigate the other. This dynamic could result in some level of confusion in these participants which could be fairly easily resolved by falling back on conspiracy beliefs.

It was further hypothesized that we would see a difference in belief outcomes based on political affiliation: Democrats should have higher rates of belief in mitigation and perceived threat. Republicans should have higher rates of conspiracy belief. This hypothesis was largely supported. As a whole, Democrats across the board thought that COVID-19 posed a high threat. When broken down into smaller groups based on levels of agency and communion, we found one of our more interesting results: the Republican integrated group was the most likely to perceive COVID-19 as posing a threat. Further, this study explored Political affiliation (Democrat versus Republican) as a potential moderator of the previously-stated relationship between agency and communion when predicting one's beliefs concerning conspiracy, mitigation efforts, and perceived threat. This moderation effect was found for conspiracy belief and perceived threat which indicates that political affiliation does need to be taken into account when examining charged issues such as those presented in this study.

Interpretation of results

Integrated and Undifferentiated Republicans were more likely than the other two groups to believe in conspiracy. When communion traits were higher, the belief in conspiracy went down, making communion protective against conspiracy belief within this context for Republicans. Without the political affiliation moderator variable, Nagurney et al.[7] found that agency was protective against conspiracy belief, whereas Korlat et al.[8] found that communion was. Both appear true, but something is unique with the political moderator, only seeing these significant results with Republicans. Fear reactivity could be the reason. Taken together with this study's results, Integrated and Undifferentiated Republicans could be showing a pattern of the extremes that translates into leaders and followers, influenced by cultural messages. Integrated Republicans may be more likely to take leadership roles within their social groups, potentially amplifying and spreading conspiracy theories. High communion alongside high agency could have a polarizing effect and might make some Republicans more susceptible to adopting beliefs prevalent in their social circles,

even if these beliefs are conspiratorial in nature. Undifferentiated Republicans, having less sense of self and connection to others, might be blindly and fervently following the integrated group in attempts to sure up their identity. If this is the case, the people in the middle could be experiencing more of the protective qualities of balanced mitigation between their agentic and communal traits.

The Republican Integrated group was also the most likely to perceive COVID-19 as posing a threat. Conservatives tend to have more gray matter and activity in the right amygdala, which could translate to more threat reactivity.[5,6] Perceiving COVID-19 as a threat does not mean one perceives the accurate reason for the threat, or what the threat actually is, and with the proliferation of conspiracy theories, any one of those could also indicate the reason for perception of threat.

Perception of threat alongside the emergence of the significant communion with large variances also could indicate several things. High communion individuals value their connections and might also accept beliefs of their social group, and in this case believe in more conspiracy theories. Thus, what should be a protective personality trait, in this context could be the reason why we still see unhealthy belief outcomes, like little belief in mitigation efforts and significant conspiracy belief. However, the story might not be all bad for Republicans. High variance appeared over and over in the scores of Republicans. This seems to indicate disagreement in the party.

Practical implications and future research

These findings could help policy makers create effective public health interventions. They might start with messaging, tailoring communication strategies that consider how to effectively communicate to groups with predispositions of fear reactivity. One recommendation is to provide reasonable cognitive closure in public health messaging, so that alternate theories do not proliferate so quickly. Amplifying messages that both empower personal agency as well as communion could be protective and pragmatic, especially if messaging aligns with group or cultural values. How to effectively and responsibly communicate with people with high threat reactivity could be a good place to start. Further studies should look into priming cultural messages.

Limitations

Several limitations should be considered when interpreting these results. First, the use of median splits to categorize agency and communion into high and low groups, while necessary for our analysis, oversimplified these continuous traits. Personality traits are different points along a spectrum, but they were made into binary variables. However, this actually strengthens the significance we found, since we found significant differences between groups despite median splits.

Second, this study relied on retrospective self-report measures that may introduce problems from memory, although the salience of COVID-19 might reduce some recall issues. Given such a momentous time in history, people's beliefs about it may be firmly established given the impact on everyone's daily life and relationships. Emotion does tend to improve episodic memory, and amygdala activation is a part of this process.[28] This time also gave participants an opportunity to catch up to reliable information that could eradicate their conspiracy belief, thus if still holding on to these beliefs, indicates they were deeply entrenched despite updated public knowledge. However, this study is unable to infer causality, or measure how and if beliefs changed over time.

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Strengths

One strength of this study is that it was highly representative of the larger United States population due to the wide net that was cast during recruitment. The study didn't rely on college students or individuals from a certain part of the country. Instead, a wide range of ages, ethnicities, genders, political beliefs, and walks of life were represented. This means that the external validity or generalizability of these findings is stronger than seen in many studies using a similar data collection approach.

Another strength of this study is that it extends the research literature into a relatively unknown area that has the potential to influence policy and campaign decisions in the future. To the best of our knowledge, no other study has examined how agency and communion interact with political affiliation when predicting important health-related outcomes such as perceived threat and belief in mitigation efforts. These findings can be used to make decisions about how to approach Republicans and Democrats in different ways when discussing outcomes such as these.[29,30]

Conclusion

Taken together, this study provides insights into the complex interplay between personality traits, political affiliation, conspiracy and health-related beliefs in the context of a global pandemic. By demonstrating the moderating role of political affiliation on the relationship between agency, communion, and health beliefs, these findings underscore the importance of considering both individual differences and social and political identities in understanding and addressing public health challenges.[30]

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Conflicts of interest

The authors declare that there is no conflict of interest.

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