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Masking Up: The Impact of  
Political Ideology, Empathy, and Conformity on  
People's Choice to Wear a Mask  
in the COVID-19 Pandemic

A Thesis in Psychology

by

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Submitted in Partial Fulfillment  
of the Requirements  
for the Degree of  
Bachelor in Arts  
With Specialized Honors in Psychology

May 2021

## **Abstract**

COVID-19 was declared a pandemic by the World Health Organization on March 11, 2020. The first confirmed case of COVID-19 in the United States was in February 2020 and by mid-March, all 50 states, Washington D.C., and four U.S. territories had reported cases (Centers for Disease Control and Prevention, 2020). The CDC and WHO reported many ways to combat the spread of COVID-19; one prominent way was wearing a face mask, an effective yet inexpensive way to stop transmission of infection. However, many people were still choosing to not wear a mask when they were out in public, including in states that required face coverings.

The purpose of this study was to gain a better understanding of what impacts people's views of masks during the COVID-19 pandemic and their mask-wearing behavior in the United States. Previous research established the efficacy of mask-wearing as well as the importance of political ideology in predicting who will wear a mask. However, less was known about predictors of people's mask-wearing behavior in the United States specifically in response to COVID-19. This study examined political ideology, belief in science, tendency toward conformity, and levels of empathy in predicting mask-wearing behavior. An online questionnaire was distributed using Amazon mTurk, and consisted of demographic questions as well as the Face Mask Perception Scale, Belief in Science Scale, COVID Attitude Networks Survey, Ideological Consistency Scale, Interpersonal Reactivity Index, and the Social Conformity Versus Autonomy Scale.

The data suggest that participants, on average, reported a tendency to find mask-wearing somewhat uncomfortable, but knew where to find masks and could do so somewhat conveniently; participants were only slightly bothered by the appearance or attention that mask-wearing created. Participants also reported moderate to high levels of empathy and favored autonomy over conformity. Politically, participants were slightly more moderate to liberal than conservative, and reported a moderate to high belief in science. Political ideology was a predictor of a majority of the mask-wearing variables, with liberals more likely to follow public health guidelines about mask-wearing and to report fewer concerns and less discomfort with those policies; moderates tended towards similar beliefs as conservatives when it came to almost every variable except for belief in science, where they were more similar to liberals. Future research should use a larger and more representative sample as well as questions that are lower in face validity to examine the original hypotheses. It could also focus on groups that do not fall along the behavioral lines of their political ideology, like college students or conservatives who are getting vaccinated and wearing masks, or how to incentivize those who are less inclined to get inoculated.

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## **Masking Up: The Impact of Political Ideology, Empathy, and Conformity on People's Choice to Wear a Mask in the COVID-19 Pandemic**

### **General Introduction**

COVID-19 is a viral disease that was declared a pandemic by the World Health Organization on March 11, 2020. The first confirmed case of COVID-19 in the United States was in February 2020 and by mid-march, all 50 states, Washington D.C., and four U.S. territories had reported cases of the virus (Centers for Disease Control and Prevention, 2020). Although information about this disease is constantly updated, the severity of the disease has remained the same. According to the World Health Organization, or WHO, “Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness” (World Health Organization, 2021). However, there have been a multitude of cases where young, healthy people have become extremely sick and some have died (Faust et al., 2020). Some of the most common long-term effects of COVID-19 include fatigue, shortness of breath, cough, joint pain, and chest pain (CDC, 2021). As of the beginning of March 2021, there have been over 28.5 million cases of COVID-19 and over 514,000 deaths that have been reported in the United States (Allen et al., 2021).

The coronavirus mainly spreads through person-to-person transmission by respiratory droplets that occur when an infected person is breathing, talking, sneezing, or coughing. These droplets can, in turn, be inhaled by another person and cause infection.

Some of the most critical preventative measures that are suggested by the CDC are washing your hands, physical distancing, and wearing a mask. They also suggest cleaning and disinfecting regularly, sanitizing and washing hands if soap and water is not readily available, and monitoring your health for symptoms of COVID-19 (CDC, 2020).

Throughout the pandemic, countries have approached containing COVID-19 in different ways, including, but not limited to, mask mandates and lockdowns. In some countries, it was much easier to enact preventative measures because of the existing culture surrounding illnesses. For example, wearing a mask when one is sick, or others are sick, in Eastern countries like China is already a cultural norm; this made the transition to wearing a mask to protect against COVID-19 simple due to the proactive actions of citizens without the need for an order from the government (Cheng et al., 2020). On the opposite end of the spectrum are countries like Sweden, whose government actively discouraged wearing masks. This was thought to create natural herd immunity and keep disruptions to everyday life at a minimum (Vogel, 2020).

In the United States, there has not been a mask mandate at the federal level, but 38 out of 50 states as well as the District of Columbia and Puerto Rico have put these restrictions in place; the states that have not enacted full mask mandates recommend masks but do not require them (see <https://www.aarp.org/health/healthy-living/info-2020/states-mask-mandates-coronavirus.html> for more information). The World Health Organization had originally advised against wearing masks (Oreskes, 2020) while the Centers for Disease Control had advised that only people who are sick or taking care of someone else who is sick need to wear masks (McReynolds, 2020). The WHO then

reversed its position in June of 2020 and began advocating for mask-wearing (Oreskes, 2020) and the CDC recognized that people might be asymptomatic carriers and also began advocating for universal mask-wearing in April of 2020 (McReynolds, 2020).

Similarly, some countries have been more successful at implementing lockdowns than others. A lockdown is, "...a temporary condition imposed by governmental authorities (as during the outbreak of an epidemic disease) in which people are required to stay in their homes and refrain from or limit activities outside the home involving public contact (such as dining out or attending large gatherings) (Merriam-Webster Dictionary, 2021). However, even if countries or states enter a full lockdown, people will still need to go out and get supplies. In addition, some jobs, like healthcare workers and food supply workers, are exempt from the lockdown and are able to leave their homes to go to work.

Some countries, such as New Zealand, Singapore, and China, implemented a lockdown and have been successful in keeping COVID-19 at a low risk ("Some are winning", 2021). In contrast, the United States has varied lockdowns on a state-to-state basis, with a majority of states locking down between mid-March and early April 2020 (British Broadcasting Company, 2020). However, this decision was left up to state governments, and lockdowns have fluctuated based on factors ranging from political ideology to number of confirmed cases. The northeastern states, as well as Washington, Minnesota, and Washington D.C., were the most aggressive about lockdowns with their original pandemic response (Leins, 2020); other states, such as North and South Dakota,

Wyoming, Utah, Arkansas, and Iowa, did not mandate lockdowns (“States That Did Not Issue”, 2021).

With the development, release, and increasing availability of safe and effective vaccines for COVID-19, states are reconsidering and revising their responses to the pandemic. As of February 12, 2021, many states are no longer in lockdown and are mostly open for business with some restrictions in place even though most states are experiencing their highest number of positive cases (New York Times, 2021). Despite the CDC urging citizens to continue wearing masks even after they have been vaccinated (CDC, 2021), mask-wearing mandates are constantly in flux; as of March 2021, the governor of Texas declared he was “opening Texas 100 percent” and no longer requiring that state residents wear masks (Office of the Texas Governor, 2021).

Masks are an effective yet inexpensive way to stop transmission of infection from person to person. However, many people are still choosing to not wear a mask when they are out in public, including in states that require face coverings. Although the number of people who wear masks has increased to 73% in December 2020, up from 52% in May 2020, mask-wearing works best when it is universal (Lopes et al., 2020).

From the onset of the pandemic, the media has covered mixed messages about wearing masks and this has, in turn, affected people’s views on masks. People who hold positions of political power and choose not to wear a mask have, intentionally or not, shown their supporters that not wearing a mask is a fine choice. Former President Trump recommended wearing a mask but did not wear one himself until much later in the pandemic (Elving, 2020). While some news outlets have backed the science behind



wearing a mask, others have said that the only people who wear masks are armed robbers and Klansmen (Carlson, 2020). Even religion has been weaponized in the fight against mask-wearing; Ohio Representative Nino Vitale was quoted as saying, “...we are all created in the image and likeness of God. That image is seen the most by our face. I will not wear a mask” (Fieldstadt, 2020).

In the politically polarized country of the United States, people are receiving their information from a myriad of sources which can include scientists and talk show hosts; this can impact their thoughts and beliefs. If a person is religious, they might be less inclined to believe in science because their religion may be providing them with the answers and comfort that they need. Belief in science is thought to be an alternative to religion in combating people’s fear of disorder (Rutjens et al., 2013), and political ideology is not necessarily a protective factor. Both liberals and conservatives are likely to participate in science denial when they come in contact with research that conflicts with their beliefs (Washburn & Skitka, 2017).

### **Mask-Wearing and Preventing COVID-19: What We Know**

The science behind the efficacy of mask-wearing predates the COVID-19 pandemic but scientists have begun conducting research on the effectiveness of masks in preventing the spread of COVID-19 specifically. Studies on the efficacy of wearing both a cloth mask and a medical-grade mask have found that both types of masks are more effective in preventing the transmission of some diseases than not wearing a mask at all (MacIntyre et al., 2015). There has been research that shows that wearing a mask (CDC, 2020) and universal masking (Gandhi & Rutherford, 2020) helps to prevent the

transmission of COVID-19 as well as which people are wearing masks more than others (Haischer et al., 2020). There have also been studies that explore how people perceive the coronavirus and face masks (Maher, MacCarron, & Quayle, 2020). Some studies have shown that even a poorly fitted mask works better than no mask (Leonard et al., 2020). In some cases, people believe that physically distancing themselves from others by six feet can replace wearing a mask but the data indicates that the distance should be at least 27 feet to guarantee that there will be no transmission of COVID-19 (Zhou et al., 2020).

Modeling also suggests that even a small reduction in community transmission could make a large difference in the impact that COVID-19 has on an area, so even just a small number of people wearing a mask could make a large impact. Although the data may not be considered statistically significant, the numbers shown in this study were the number of human lives that would be lost, and so the clinical significance and importance of this data are clear (Greenhalgh et al., 2020). Masks also reduce the severity of the disease if a person wearing one happens to contract COVID-19 (Gandhi & Rutherford, 2020). The theory of viral pathogenesis holds that the severity of the disease is proportionate to the viral inoculum received; in other words, if a person is exposed to a disease for a long period of time, they will likely get worse symptoms than if they are exposed for a short period of time. Although masks do not protect the wearer as much as they protect the people around them, mask-wearing still does have a positive effect on the person wearing one. Although there is quite a bit of scientific evidence to support the efficacy of wearing a mask, some people still may not feel as if they need to wear one; the precautionary principle can be applied here. This principle "...is a strategy for

approaching issues of potential harm when extensive scientific knowledge on the matter is lacking” (Greenhalgh et al., 2020, p. 1).

Although the science behind wearing a mask clearly shows that they are effective, it will not make a difference unless people choose to wear a mask. After the full face mask mandate went into effect in specific states, there was a significant decline in COVID-19 growth rate within those states. However, this decline was not statistically significant when just an employee-only mask mandate was put into place (Lyu & Wehby, 2020). A highly publicized case study underscores these findings; in May of 2020, it was reported that two hairstylists contracted COVID-19 and continued to see 139 clients before they went into quarantine. Both of the stylists and each one of their clients were wearing a face mask and of those 139 clients, there were no cases of COVID-19 transmitted from the stylists (Hendrix et al., 2020). Conversely, there have been “superspreader” events where there was little to no compliance with mask mandates that were the source of multiple cases of COVID-19. A superspreader event is a, “...[gathering] of people where even just a single infection spurs a large outbreak among attendees” (“What are superspreader events”, 2020). For example, a motorcycle rally that was held in South Dakota in August of 2020 was the source of 51 primary cases and approximately 35 secondary or tertiary cases (Firestone et al., 2020); many of the attendees were not wearing a mask or following social distancing guidelines. However, the Black Lives Matter protests that occurred in the late spring and early summer of 2020 did not contribute to the community spread of COVID-19 because most participants were wearing masks when protesting (Dave et al., 2020). Taken together, the data and these

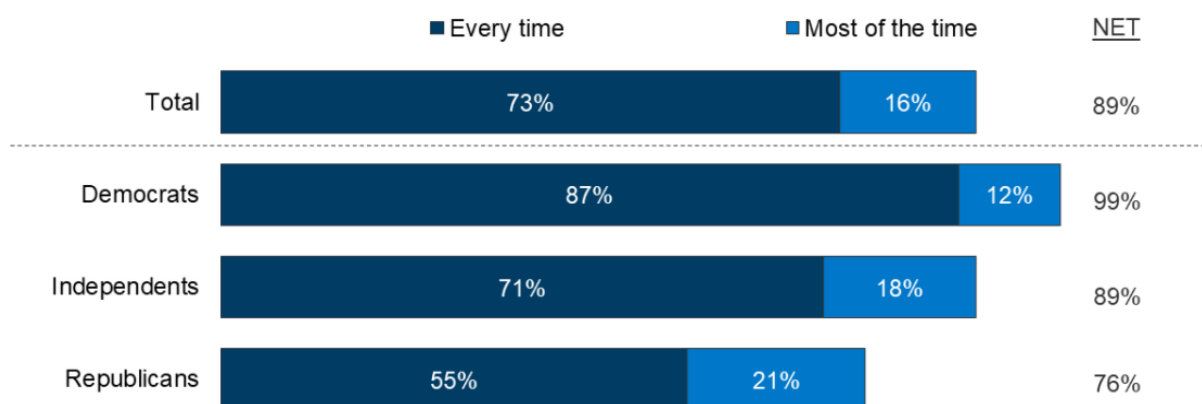
case studies provide evidence of the efficacy of mask-wearing in preventing the spread of COVID-19.

## **Predictors of Mask-Wearing in the United States**

### ***Politics and Mask-Wearing***

When COVID-19 was first confirmed in the United States in early 2020, former President Trump compared the disease to the seasonal flu and told the public that it was nothing to worry about (Beer, 2020). Contrary to Trump's claim that COVID-19 was similar to typical seasonal illnesses and people should not be overreacting, there were over 36 million unemployment claims filed by June of 2020, over 100 times what the claims were in 2019 around the same time (Cohen & Hsu, 2020). Throughout the pandemic, Trump regularly downplayed numbers and at one point mentioned that, "If we stopped testing right now, we'd have very few cases, if any," (Luthra, 2020). The COVID-19 pandemic went on to become highly politicized; people's willingness to follow mandates and engage in safe public health behaviors became divided along ideological and party lines. Conservatives were more likely than liberals to view the virus as less serious, believed that the media exaggerated the severity of the virus, and thought that they had less personal vulnerability to the virus (Calvillo et al., 2020). Figure 1 shows that there are differences in the percentage of people in each political party but a majority of people are still reporting that they wear a mask "every time" or "most of the time" when they leave their house (Lopes et al., 2020).

**Figure 1.** *Percentage of Individuals Who Say They Wear a Protective Mask When They Leave Their House and Might Be in Contact with Other People*



SOURCE: KFF Health Tracking Poll (Nov 30-Dec 8, 2020). See topline for full question wording.

**KFF**

As the pandemic progressed through the United States, campaigning for the 2020 United States Presidential Election became one of the only other things that the news was regularly reporting on. Since the entire country was being impacted by COVID-19, it was a critical issue for the election. Along with the pandemic itself, the mask mandates and wearing a mask in general became hot-button topics for candidates up for re-election. Some politicians and parties took a stance that masks are “muzzles” and take away from personal freedoms, while others have supported and embraced masks from the first day that they were recommended by the CDC (Haischer et al., 2020). One of now-President Joe Biden’s more prominent campaign promises was that he would focus on stopping the spread of COVID-19 in the United States. When he took office on January 20, 2021, he asked United States citizens to wear a mask for the first 100 days of his presidency and has been focused on getting more people vaccinated; in fact, as of mid April 2021, over 194 million vaccine doses were administered in the United States (Carlsen et al., 2021).

Additional research is necessary to better understand the ways in which political ideology and party affiliation predict mask-wearing behavior.

### ***Other Predictors of Mask-Wearing***

Separate from the politicized nature of wearing a mask, research has identified some common characteristics of mask-wearers and non-mask-wearers. The odds of wearing a mask in this timeframe increased significantly with age, with people over the age of 65 being the most likely to be wearing a mask, then people aged 30 to 65 years old, while people 2 to 30 years old were the least likely to be wearing a mask (Haischer et al., 2020). Gender is also a predictor; women were 1.5 times more likely to be wearing a mask than men. In addition, people living in an urban or suburban area were choosing to wear a mask 4 times more often than those in rural areas (Haischer et al., 2020).

Individual beliefs, in addition to demographic characteristics, were also associated with mask-wearing. People were more likely to use a face covering if they had a favorable attitude towards them, intention to use them, and ability to use them. People who supported using a mask and believed that they offered protection for self, others, and the community were also more likely to wear a mask (Fisher et al., 2020). Some people might choose not to wear a mask because wearing one could be perceived as a sign of fragility or weakness (Haischer et al., 2020); this could be viewed as admitting vulnerability to the virus and some people are less likely to view the virus as something that they can contract themselves (Calvillo et al., 2020).

### **Mask-Wearing: What We Don't Know**

Although there are some reliable predictors of wearing a mask in the COVID-19 pandemic, such as political ideology (Lopes et al., 2020), beliefs about the protective nature of masks (Fisher et al., 2020), and demographic characteristics (Haischer et al., 2020), more research is needed. One predictor of whether people in the United States are wearing masks might be empathy. Empathy is defined as, “Understanding a person from his or her frame of reference rather than one’s own, or vicariously experiencing that person’s feelings, perceptions, and thoughts” (American Psychological Association, 2020). The current research on wearing a mask shows that masks do more to protect the people around the person who is wearing the mask than the person who is wearing the mask (Eikenberry et al., 2020). Therefore, the person who is wearing the mask has to make the decision to wear it for other people instead of for themselves. In fact, people with antisocial traits, such as low levels of empathy and high levels of callousness and risk-taking, were not as likely to adhere to social distancing and mask-wearing rules put in place (Miguel et al., 2021). Individuals higher in empathy may be more likely to deal with the discomfort or inconvenience of mask-wearing in order to protect others. People who have high levels of empathy tend to participate more in prosocial behavior (Eckland, Huang, & Berenbaum, 2020), and therefore may be more likely to wear a mask.

Conformity could also be another factor in a person’s decision to wear a mask. According to the American Psychological Association (2020), conformity is, “the adjustment of one’s opinions, judgements, or actions so that they become more consistent with (a) the opinions, judgements, or actions of other people or (b) the normative standards of a social group or situation.” When individuals conform to group norms, they

are likely to be positively reinforced; however, when a member of a group decides to rebel, they open themselves up to the possibility of negative repercussions from others in their group (Schachter, 1951).

Some social groups might place more emphasis on conforming, whether it is to society's standards or their own standards, over personal autonomy and this might be a factor in people's decisions. Others would rather forego their personal freedoms due to their fear of disorder and their respect for common norms and values (Feldman, 2003). While issues such as "personal freedom" or "law and order" may seem somewhat politically or ideologically grounded, the reality is complicated; a person might choose to conform to a social standard in one situation but reject that standard in favor of personal freedom in another. Similarly, political parties are not consistent in their claim as to whether people should always conform or always act as individuals but instead vary those claims depending on the particular social issue.

Given the politicized nature of mask-wearing in the United States at this time, people's decision about whether to wear a mask may be influenced by their political beliefs and affiliations. While someone who identifies as liberal may not want to wear a mask, they might elect to wear one anyway for fear of being judged by other liberal friends or family members. Conversely, someone who is more conservative might choose not to wear a mask, even if they believe the science behind mask-wearing or would prefer to follow legal or social mandates due to the pressures of other conservatives in their social group. For example, Forsyth (2020) suggests that the groups of people who are choosing to protest public health initiatives might be experiencing groupthink and,



therefore, could be lacking judgement and rationality. It may be that political ideology, empathy, and conformity impact people's thoughts, feelings, and behaviors in their day-to-day life, especially during the pandemic.

### **The Present Study**

The purpose of this study is to gain a better understanding of what impacts people's views of masks during the COVID-19 pandemic and their mask-wearing behavior in the United States. Previous research has established the efficacy of mask-wearing as well as the importance of political ideology in predicting who will wear a mask. However, less is known about how people choose to wear or to not wear a mask in the United States in response to COVID-19, and whether political ideology interacts with other beliefs - specifically, belief in science, tendency toward conformity, and level of empathy - in predicting mask-wearing behavior. Therefore, the following hypotheses guided the methodology of this study:

*H1: Political Ideology:* There will be a main effect of political ideology on mask-wearing, such that people with a socially liberal political ideology will be more likely to wear a mask than those with a socially conservative political ideology. In addition, there will be an interaction between political ideology and belief in science, such that those with a stronger belief in science who are socially conservative will be more likely to wear a mask than social conservatives with a lower belief in science.

*H2: Empathy:* There will be a main effect of empathy on mask wearing, such that those higher in empathy will be more likely to wear a mask than those lower in empathy. In addition, there will be an interaction between empathy and political

ideology, such that those higher in empathy who are socially conservative will be more likely to wear a mask than those lower in empathy who are socially conservative.

H3: *Conformity*: There will be an interaction between conformity and political ideology on mask-wearing, such that people with higher tendencies toward conformity will be more likely to follow party lines with respect to mask wearing. Specifically, individuals high in conformity who are more socially liberal will be more likely to wear a mask, and those who are more socially conservative will be less likely to wear a mask, than those low in conformity.

## Method

### Participants

Participants were recruited in two ways: as part of an introductory Psychology course for course credit and via Amazon MTurk. In the first sample of introductory Psychology students, there were 6 students who identified as male, 14 students who identified as female, and 1 student who identified as non-binary. Participants ranged in age from 18 to 20 ( $M = 18.81$ ,  $SD = 0.87$ ). The sample was made up of 86% residents of the Northeast, 10% residents of the Midatlantic, and 4% did not specify which region they live in. Participants in this sample were politically diverse, self-reporting as 19% conservative, 43% liberal, and 38% moderate.

In the sample of Amazon MTurk participants, there were 121 participants who identified as male, 80 participants who identified as female, and 1 participant who identified as non-binary. Participants ranged in age from 22 to 69 ( $M = 36.58$ ,  $SD = 10.61$ ). The sample was made up of 22% residents of the Northeast, 6% residents of the Midatlantic, 32% residents of the Southeast, 10% residents of the Southwest, 19% residents of the Midwest, 9% residents of the West Coast, 0.5% residents of Alaska, and 0.5% residents of Hawaii. This survey was made available to all MTurk workers who fit the criteria, which required participants to be citizens of the United States and not affiliated in any way with Drew University. MTurk workers were able to choose whether or not to take the survey. Participants in this sample were also politically diverse, self-reporting as 38% conservative, 51% liberal, and 11% moderate.

### Procedures

Participants were recruited through Amazon.com's Mechanical Turk (MTurk) platform. Mechanical Turk is a secure online service where people sign up to complete surveys and other online tasks for small sums of money. MTurk is increasingly (and now frequently) used in survey-based social science research (see <https://www.mturk.com/mturk/welcome> for more information). The survey access was limited to American participants who are 18 years or older who have no affiliation with Drew University. Each participant received a compensation of \$1.00. Each participant was provided with an informed consent form regarding the content of the study and their right to withdraw from participating at any point.

Participants completed the survey online through the software website Qualtrics. Upon clicking on the survey, participants were taken to an informed consent page where if they agreed to participate in the study, they were taken to the questionnaire. After completing the questionnaire, participants were directed to the debriefing form which included a PIN to ensure that participants finished the entire questionnaire; upon confirmation of this, the researcher then approved the participant for their payment. Participants who declined to participate after reading the informed consent page were sent to the debriefing form at the end of the study. Only the participants' demographic reports from this data collection were relevant to the study and, thus, participants were able to participate anonymously.

### **Materials and Measures**

Participants completed an online survey that consisted of multiple scales as well as a demographic information questionnaire. The demographic questionnaire included

questions about the participant's gender, race/ethnicity, age, region of residence within the United States, highest level of education they have received, and their political leanings. In addition, participants were asked about the social situations in which they would or would not wear a mask.

***Face Mask Perception Scale.*** Attitudes towards face masks were measured by the Face Mask Perception Scale (Howard, 2020). This is a 32-item and 8-dimension scale that shows participants' justifications for wearing or not wearing a face mask. The eight dimensions of the Face Mask Perception Scale (FMPS) are: comfort, efficacy doubts, access, compensation, inconvenience, appearance, attention, and independence; in this study, only the comfort, efficacy, doubts, access, inconvenience, appearance, and attention subscales were included in the analyses. (See Appendix A for all items and subscales.) Participants use a 7-point Likert scale to rate the degree to which they agree with each given statement where 1=Strongly Disagree and 7=Strongly Agree. Higher numbers on each of these subscales indicate more negative perceptions of face masks. The measure was demonstrated to have high construct validity (Howard, 2020).

***Belief in Science Scale.*** Trust in and attitudes towards science were measured by the Belief in Science Scale (Farias, Newheiser, Kahane, & de Toledo, 2013). (See Appendix B for all items.) This 10-item scale consists of statements and ideas about science in which participants used a 7-point Likert scale to indicate how much they agree or disagree with each statement and assesses participants' belief in science where 1=Strongly Disagree and 7=Strongly Agree. Higher numbers indicate a stronger belief in science. The Belief in Science Scale (BISS) has high internal reliability ( $\alpha = .86$ ).

***COVID Attitude Networks Survey.*** The COVID Attitude Networks Survey (Maher, MacCarron, & Quayle, 2020) maps public health responses with attitude networks based on the United Kingdom's early COVID-19 response phase. For this study, select items from this survey were included that assessed thoughts, feelings, and behaviors relating to hoarding, misinformation, and both the participant's positive public health behaviors as well as others' behaviors. (See Appendix C for all items and subscales.) Most items were scored with a 7-point Likert Scale which participants used to indicate how much they agree or disagree with each statement where 1=Strongly Disagree and 7=Strongly Agree. Higher numbers indicate more adherence to recommended Covid health behavioral practices.

***Ideological Consistency Scale.*** The Ideological Consistency Scale (Pew Research Center, 2014) gauges the extent to which people offer mostly liberal or mostly conservative views across a range of political value dimensions. (See Appendix D for all items.) Each question in this 10-item scale includes two statements, one of which tends to be associated with more conservative thinking while the other tends to be associated with more liberal thinking. Participants choose which statement they feel most accurately describes themselves; higher scores indicate more conservative thinking.

***Interpersonal Reactivity Index.*** The Interpersonal Reactivity Index (Davis, 1980) measures the level of empathy that a participant possesses. The four subscales of the Interpersonal Reactivity Index are perspective-taking, fantasy, empathy concern, and personal distress. (See Appendix E for all items.) This is a 28-item 4-dimension scale that includes perspective-taking, fantasy, empathic concern, and personal distress; in this

study, only the perspective-taking, empathic concern, and personal distress subscales were included in the analyses. Participants rate their feelings on a 5-point Likert scale where 1=Does not describe me and 5=Describes me extremely well. Higher numbers indicate greater degrees of empathy.

***Social Conformity Versus Autonomy Scale.*** The Social Conformity Versus Autonomy Scale (Feldman, 2003) measures a participant's level of priority given to social conformity versus personal autonomy. The five subscales in the Social Conformity Versus Autonomy Scale are conformity versus autonomy, freedom versus fear of disorder, respect for common norms and values, social cohesion, and socialization and child-rearing values. (See Appendix F for all items.) Only the conformity versus autonomy, freedom versus fear of disorder, and respect for common norms and values subscales were included in the analyses. This scale is 5-dimensional and has 17 pairs of statements. Each pair of statements includes one statement that is more geared towards conformity and one statement that is geared towards autonomy. Participants choose which of the statements in each pair is the one that they align with most. Higher numbers indicate a greater tendency toward conformity. This scale is high in both reliability and validity.

## Results

Because the objective of this research is about how people view masks and their public health beliefs and behaviors throughout the COVID-19 pandemic, it was important to take a look at the scales that were relevant to those specific variables. In Table 1, the descriptive statistics of the Face Mask Perception Scale (FMPS; Howard, 2020) and the COVID Attitude Networks Survey (Maher, MacCarron, & Quayle, 2020) are shown.

**Table 1**

*Descriptive Statistics for Face Mask Perception Scale and COVID Attitude Networks Survey*

Scale	Variable	N	Mean	Std. Deviation
<b>Face Mask Perception Scale</b>	Comfort	202	4.07	1.75
	Efficacy	201	3.57	1.9
	Access	198	3.12	1.93
	Inconvenience	201	3.61	1.83
	Appearance	202	3.78	1.87
	Attention	201	3.47	1.86
<b>COVID Attitude Networks Survey</b>	Behavioral Compliance	202	5.61	1.12
	Hoarding and Misinformation	202	4.86	0.87
	Epistemic Clarity	201	5.72	1.31



Possible scores for each of these variables ranged from 1-7. The data suggest that participants, on average, reported a tendency to find mask-wearing somewhat uncomfortable, but knew where to find masks and could do so somewhat conveniently; participants were only slightly bothered by the appearance or attention that mask-wearing created. In addition, participants, on average, reported they were fairly likely to have increased health behaviors such as hand-washing or limiting social contact and increased their purchases of sanitizing products, and indicated understanding of the need to take extra health and safety precautions. Overall, participants also trusted the information put out by the government while not sharing contradicting information or fake news.

In Table 2, the descriptive statistics of the Ideological Consistency Scale (Pew Research Center, 2014), the Belief in Science Scale (Farias et al., 2013), the Interpersonal Reactivity Index (Davis, 1980), and the Social Conformity vs Autonomy Scale (Feldman, 2003) are shown. These scales are important for the interactions that were looked at in the hypotheses.

**Table 2**

*Descriptive Statistics for Ideological Consistency Scale, Belief in Science Scale, Interpersonal Reactivity Index, and Social Conformity vs Autonomy Scale*

General Scale	Scale/Subscale	N	Mean	Std. Deviation
	<b>Ideological Consistency Scale</b>	202	4.14	2.69
	<b>Belief in Science Scale</b>	202	5.06	1.33
<b>Interpersonal Reactivity Index</b>	Perspective-Taking	201	3.41	0.75
	Empathy Concern	201	3.39	0.75

	Personal Distress	201	2.90	0.78
<b>Social Conformity vs Autonomy Scale</b>	Conformity vs Autonomy	200	1.25	0.94
	Freedom vs Fear of Disorder	200	1.03	1.03
	Respect For Common Norms and Values	200	1.15	0.98

The possible scores for political ideology ranged from 0-10, for belief in science from 1-7, for the empathy subscales from 1-5, and for the conformity subscales from 0-3. The data suggest that politically, participants were, on average, slightly more moderate to liberal than conservative, and reported a moderate to high belief in science. Converting the political ideology scores to categories yielded three groups: liberals ( $n = 86$ ), moderates ( $n = 77$ ), and conservatives ( $n = 39$ ). Participants also reported moderate to high levels of empathy - that they were able to see things from others' perspectives, feel empathy, and felt emotional in emergency situations. With respect to conformity versus autonomy, participants in general favored autonomy over conformity, believing that that people should be able to make their own decisions and express themselves, that the right to freedom was more important than any disorder that might arise from such freedoms, and that people should always be questioning rather than blindly accepting the rules.

### **Relationship Between Mask-Wearing Behaviors, COVID-19 Attitudes, Belief in Science, Empathy, and Conformity**

A series of Pearson  $r$  correlations were run in order to next examine whether and how the mask-wearing behaviors and COVID-19 attitudes were related to participants'

belief in science, levels of empathy, and degrees of conformity (see Appendix G for complete Pearson Correlation Matrix).

*Masks are uncomfortable.* Within the scales that directly measured face mask perceptions, people who found masks to be uncomfortable also had less confidence in the efficacy of masks ( $r = .78, p < .01$ ), felt it was harder to gain access to a face mask ( $r = .64, p < .01$ ), and found masks to be inconvenient ( $r = .79, p < .01$ ). People who found masks to be less comfortable also did not like how masks look ( $r = .69, p < .01$ ) and found others who wore masks to be more suspicious ( $r = .76, p < .01$ ). These participants also did not trust the information put out by the government while sharing information that directly contradicted government information ( $r = -.26, p < .01$ ), and expressed a feeling that people were overreacting to COVID-19 ( $r = -.23, p < .01$ ). There was no significant correlation for perceived mask comfort and adherence to public health behaviors ( $r = -.05, p > .05$ ) or belief in science ( $r = .03, p > .05$ ). People who found masks to be uncomfortable also struggled to see things from another perspective ( $r = -.27, p < .01$ ), had lower levels of empathy ( $r = -.27, p < .01$ ), and were not good at staying calm in an emergency situation ( $r = .33, p < .01$ ). Finally, participants who found masks to be uncomfortable had higher levels of conformity with  $r$ -values ranging from .30 to .32 and a  $p$ -value of .01.

*Masks don't work.* People who did not believe that masks work felt that it was harder to gain access to a mask ( $r = .79, p < .01$ ), found them to be inconvenient ( $r = .84, p < .01$ ), and did not like how either themselves or other people looked in a face mask ( $r = .69, p < .01$ ) while finding people who wore face masks to look more suspicious and

untrustworthy ( $r = .82, p < .01$ ). These people were also less likely to follow public health guidelines ( $r = -.17, p < .05$ ), trust government information ( $r = -.38, p < .01$ ), or think that the precautions people were taking against COVID-19 made sense ( $r = -.36, p < .01$ ). It is noteworthy that there was no relationship between belief that masks do not work and belief in science ( $p > .05$ ). People who thought that masks don't work also struggled to see things from another perspective ( $r = -.28, p < .01$ ), had lower levels of empathy ( $r = -.36, p < .01$ ), and were not good at staying calm in an emergency situation ( $r = .30, p < .01$ ). Finally, participants who found masks to be uncomfortable had higher levels of conformity with  $r$ -values ranging from .26 to .40 and a  $p$ -value of .01.

*Masks are hard to get.* The participants who felt that they did not have easy access to face masks also found masks to be inconvenient ( $r = .80, p < .01$ ), did not like how either themselves or other people looked in a face mask ( $r = .63, p < .01$ ), and found people who wore face masks to look more suspicious and untrustworthy ( $r = .76, p < .01$ ). They also distrusted government information while sharing information that directly contradicted government information ( $r = -.24, p < .01$ ) and believed that people are being overly cautious when it comes to COVID-19 ( $r = -.20, p < .01$ ). There was no significant correlation between people who felt that they did not have easy access to masks and adherence to public health guidelines ( $r = -.08, p > .05$ ) or belief in science ( $r = .10, p > .05$ ). People who felt that they did not have easy access to masks also struggled to see things from another perspective ( $r = -.24, p < .01$ ), had lower levels of empathy ( $r = -.40, p < .01$ ), and were not good at staying calm in an emergency situation ( $r = .41, p < .01$ ).

.01). Finally, participants who felt it was hard to get masks had higher levels of conformity with  $r$ -values ranging from .24 to .29 and a  $p$ -value of .01.

*Masks are inconvenient.* People who found masks to be inconvenient also did not like how either themselves or other people looked in a face mask ( $r = .79, p < .01$ ) and found people who wore face masks to look more suspicious and untrustworthy ( $r = .84, p < .01$ ). These people were less likely to follow public health guidelines ( $r = -.16, p < .05$ ), trust government information ( $r = -.31, p < .01$ ), or think that the precautions people were taking made sense ( $r = -.32, p < .01$ ). There was no significant correlation between people who felt that masks were inconvenient and belief in science ( $r = -.06, p > .05$ ). People who felt that masks were inconvenient also struggled to see things from another perspective ( $r = -.26, p < .01$ ), had lower levels of empathy ( $r = -.33, p < .01$ ), and were not good at staying calm in an emergency situation ( $r = .34, p < .01$ ). Finally, participants who found masks to be inconvenient had higher levels of conformity with  $r$ -values ranging from .22 to .30 and a  $p$ -value of .01.

*Masks are unattractive.* Those that do not like how people look in masks also found people who wore face masks to look more suspicious and untrustworthy ( $r = .77, p < .01$ ). There was no significant correlation between people who felt that masks are unattractive and adherence to public health guidelines ( $r = -.11, p > .05$ ) or belief in science ( $r = -.07, p > .05$ ). They also distrusted government information while sharing information that directly contradicted government information ( $r = -.25, p < .01$ ) and believed that people are being overly cautious when it comes to COVID-19 ( $r = -.18, p < .01$ ). People who felt that masks were unattractive also struggled to see things from

another perspective ( $r = -.18, p < .05$ ), had lower levels of empathy ( $r = -.19, p < .01$ ), and were not good at staying calm in an emergency situation ( $r = .22, p < .01$ ). Finally, participants who found masks to be inconvenient had higher levels of conformity with  $r$ -values ranging from .19 to .23 and a  $p$ -value of .01.

*Masks are suspicious and make people look untrustworthy.* People who thought that others who wore face masks looked more suspicious and untrustworthy also distrusted government information and shared contradictory information ( $r = -.31, p < .01$ ) and believed that people are being overly cautious when it comes to COVID-19 ( $r = -.24, p < .01$ ). There was no significant correlation between people who felt that masks look suspicious and adherence to public health guidelines ( $r = -.13, p > .05$ ) or belief in science ( $r = -.00, p > .05$ ). People who felt that masks made people look suspicious also struggled to see things from another perspective ( $r = -.23, p < .01$ ), had lower levels of empathy ( $r = -.28, p < .01$ ), and were not good at staying calm in an emergency situation ( $r = .34, p < .01$ ). Finally, participants who found masks to be inconvenient had higher levels of conformity with  $r$ -values ranging from .21 to .30 and a  $p$ -value of .01.

*General COVID-19 Attitudes.* When it came to general COVID-19 attitudes, the participants who were less likely to follow public health guidelines also distrusted government information about COVID-19 and were more likely to share contradictory information about the virus ( $r = .58, p < .01$ ) and believed that people are being overly cautious when it comes to COVID-19 ( $r = .79, p < .01$ ). People who were less likely to follow public health guidelines were also less likely to believe in science ( $r = .48, p < .01$ ), struggled to see things from another perspective ( $r = .42, p < .01$ ), and had lower

levels of empathy ( $r = .25, p < .01$ ). There were no significant correlations between people who did not follow public health guidelines and being able to stay calm in an emergency situation ( $r = -.04, p > .05$ ), having higher levels of conformity ( $r = -.07, p > .05$ ), and having respect for common norms ( $r = -.09, p > .05$ ); interestingly, people who were less likely to follow public health guidelines were more likely to forego personal freedoms because of their fear of disorder ( $r = -.19, p < .01$ ).

Those that distrusted government information and who also shared information that directly contradicted government information were more likely to believe that people are overreacting to COVID-19 ( $r = .57, p < .01$ ). People who were less likely to trust government information and share information that directly contradicted government information were also less likely to believe in science ( $r = .37, p < .01$ ), struggled to see things from another perspective ( $r = .27, p < .01$ ), and had lower levels of empathy ( $r = .25, p < .01$ ). Participants who were less likely to trust government information also were able to stay calm in emergency situations ( $r = -.23, p < .01$ ), chose conformity over autonomy ( $r = -.25, p < .01$ ), and chose to forego personal freedoms due to their fear of disorder ( $r = -.17, p < .05$ ). There was no significant correlation between distrusting government information and having respect for common norms and values ( $r = -.05, p > .05$ ).

Participants who believed that people were overreacting to COVID-19 were less likely to believe in science ( $r = .45, p < .01$ ), struggled to see things from another perspective ( $r = .39, p < .01$ ), and had lower levels of empathy ( $r = .23, p < .01$ ); there was no significant correlation between thinking that people were overreacting to COVID-

19 and keeping calm in an emergency situation ( $r = -.01, p > .05$ ). People who believed that people were overreacting to COVID-19 tended to choose conformity over autonomy ( $r = -.20, p < .01$ ), to forego personal freedoms due to their fear of disorder ( $r = -.29, p < .01$ ), and had respect for common norms and values ( $r = -.16, p < .05$ ).

### **Political Ideology as a Predictor of Mask-Wearing Behaviors, COVID-19 Attitudes, Belief in Science, Empathy, and Conformity**

A series of ANOVAs were run to examine whether mask-wearing behaviors and COVID-19 attitudes were different depending on whether people's political ideology was categorized as liberal, moderate, or conservative. There was not enough variability in empathy, belief in science, or conformity to include these variables in the analyses, and so whether or how these variables interacted with political ideology could not be examined.

*Masks are uncomfortable.* The results indicate that political ideology was a significant predictor of whether participants thought wearing masks were comfortable at the  $p < .05$  level for the three conditions [ $F(2, 199) = 47.96, p < .01$ ]. A Tukey Honest Significant Difference (HSD) post-hoc analysis revealed that conservatives ( $M = 5.21, p < .01$ ) and moderates ( $M = 4.78, p < .01$ ) were more likely to indicate that wearing a mask was uncomfortable than liberals ( $M = 2.93$ ); there was no significant difference in ratings of mask discomfort between moderates and conservatives ( $p > .05$ ).

*Masks don't work.* The results indicate that political ideology was a significant predictor of whether or not participants thought that masks worked at the  $p < .05$  level for the three conditions [ $F(2, 198) = 50.61, p < .01$ ]. A Tukey HSD post-hoc analysis



revealed that conservatives ( $M = 4.70, p < .01$ ) and moderates ( $M = 4.42, p < .01$ ) were more likely to indicate that wearing a mask did not work than liberals ( $M = 2.30$ ); there was no significant difference in ratings of mask efficacy between moderates and conservatives ( $p > .05$ ).

*Masks are hard to get.* The results indicate that political ideology was a significant predictor of whether or not participants felt like they knew where to get a mask at the  $p < .05$  level for the three conditions [ $F(2, 195) = 31.41, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that conservatives ( $M = 4.18, p < .01$ ) and moderates ( $M = 3.82, p < .01$ ) were more likely to indicate that they did not know where or how to get a mask than liberals ( $M = 2.03$ ); there was no significant difference in ratings of mask access between moderates and conservatives ( $p > .05$ ).

*Masks are inconvenient, unattractive, or suspicious.* The results indicate that political ideology was a significant predictor of whether or not participants thought that wearing a mask was inconvenient at the  $p < .05$  level for the three conditions [ $F(2, 198) = 47.09, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that conservatives ( $M = 4.80, p < .01$ ) and moderates ( $M = 4.34, p < .01$ ) were more likely to indicate that wearing a mask was inconvenient than liberals ( $M = 2.43$ ); there was no significant difference in ratings of mask inconvenience between moderates and conservatives ( $p > .05$ ). The results also indicate that political ideology was a significant predictor of whether or not participants believed that masks were unattractive at the  $p < .05$  level for the three conditions [ $F(2, 199) = 20.81, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that conservatives ( $M = 4.71, p < .01$ ) and moderates ( $M = 4.30, p < .01$ ) were more likely to

indicate that they found masks to be unattractive than liberals ( $M = 2.90$ ); there was no significant difference in ratings of mask appearance between moderates and conservatives ( $p > .05$ ). Further, the results indicate that political ideology was a significant predictor of whether or not participants thought that masks made people seem untrustworthy at the  $p < .05$  level for the three conditions [ $F(2, 198) = 33.73, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that conservatives ( $M = 4.49, p < .01$ ) and moderates ( $M = 4.17, p < .01$ ) were more likely to indicate that they found people who wear masks to seem untrustworthy than liberals ( $M = 2.40$ ); there was no significant difference in ratings of mask-wearer untrustworthiness and suspicion between moderates and conservatives ( $p > .05$ ).

*General COVID-19 attitudes.* The results indicate that political ideology was a significant predictor of whether or not participants followed COVID-19 public health guidelines at the  $p < .05$  level for the three conditions [ $F(2, 199) = 9.35, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that conservatives ( $M = 5.18, p < .01$ ) and moderates ( $M = 5.41, p < .01$ ) were more likely to indicate that they did not follow these public health guidelines than liberals ( $M = 5.98$ ); there was no significant difference in likelihood to follow public health guidelines between moderates and conservatives ( $p > .05$ ). The results also indicate that political ideology was a significant predictor of whether or not participants trusted government information, shared misinformation, and bought more sanitizing supplies at the  $p < .05$  level for the three conditions [ $F(2, 199) = 12.93, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that conservatives ( $M = 4.61, p < .01$ ) and moderates ( $M = 4.61, p < .01$ ) were more likely to indicate that they did not

trust government information while sharing misinformation and buying more sanitizing products than liberals ( $M = 5.21$ ); there was no significant difference in ratings of these variables between moderates and conservatives ( $p > .05$ ). Finally, the results indicate that political ideology was a significant predictor of whether or not participants felt that the extra steps people were taking to protect from COVID-19 were meaningful at the  $p < .05$  level for the three conditions [ $F(2, 198) = 21.65, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that conservatives ( $M = 4.94, p < .01$ ) and moderates ( $M = 5.42, p < .01$ ) were more likely to indicate that they did not believe that these steps were meaningful and made sense than liberals ( $M = 6.33$ ); there was no significant difference in ratings of epistemic clarity between moderates and conservatives ( $p > .05$ ).

*Belief in Science.* The results indicate that political ideology was a significant predictor of whether or not participants had a high level of belief in science at the  $p < .05$  level for the three conditions [ $F(2, 199) = 8.00, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that liberals ( $M = 5.38, p < .01$ ) and moderates ( $M = 5.05, p < .05$ ) were more likely to indicate that they had a higher level of belief in science than conservative ( $M = 4.39$ ); there was no significant difference in ratings of belief in science between moderates and liberals ( $p > .05$ ).

*Empathy.* The results indicate that political ideology was a significant predictor of whether or not participants felt that they were able to take on another perspective at the  $p < .05$  level for the three conditions [ $F(2, 198) = 13.52, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that conservatives ( $M = 3.22, p < .01$ ) and moderates ( $M = 3.17, p < .01$ ) were less likely to indicate that they were able to take on another perspective than

liberals ( $M = 3.71$ ); there was no significant difference in ratings of taking another perspective between moderates and conservatives ( $p > .05$ ). The results also indicate that political ideology was a significant predictor of empathy levels at the  $p < .05$  level for the three conditions [ $F(2, 198) = 13.23, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that conservatives ( $M = 3.20, p < .01$ ) and moderates ( $M = 3.15, p < .01$ ) were less likely to indicate that they had a high level of empathy than liberals ( $M = 3.68$ ); there was no significant difference in ratings of empathy between moderates and conservatives ( $p > .05$ ). Furthermore, the results indicate that political ideology was not a significant predictor of whether or not participants were able to stay calm in emergency situations at the  $p < .05$  level for the three conditions [ $F(2, 198) = 3.14, p < .05$ ]. Although the overall model was significant, a Tukey HSD post-hoc analysis revealed that there was no difference ( $p > .05$ ) between conservatives ( $M = 3.00$ ), moderates ( $M = 3.03$ ), or liberals ( $M = 2.75$ ).

*Conformity.* The results indicate that political ideology was a significant predictor of participants' conformity levels at the  $p < .05$  level for the three conditions [ $F(2, 197) = 10.82, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that there was a significant difference between all three groups. Liberals were significantly lower in conformity ( $x = 0.95$ ) than both moderates ( $M = 1.32, p < .05$ ) and conservatives ( $M = 1.74, p < .01$ ), who were also significantly different from each other ( $p < .05$ ). The results also indicate that political ideology was a significant predictor of whether participants chose freedom over their fear of disorder at the  $p < .05$  level for the three conditions [ $F(2, 197) = 9.57, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that conservatives ( $M = 1.41, p < .01$ ) and

moderates ( $M = 1.22, p < .01$ ) were less likely to choose freedom over fear of disorder than liberals ( $M = 0.68$ ); there was no significant difference in ratings of freedom versus fear of disorder between moderates and conservatives ( $p > .05$ ). Finally, the results indicate that political ideology was a significant predictor of participants' respect for common norms and values at the  $p < .05$  level for the three conditions [ $F(2, 197) = 16.09, p < .01$ ]. A Tukey HSD post-hoc analysis revealed that there was a significant difference between all three groups. Liberals were significantly lower in conformity ( $x = .80$ ) than both moderates ( $M = 1.20, p < .05$ ) and conservatives ( $M = 1.79, p < .01$ ), who were also significantly different from each other ( $p < .01$ ).

## Discussion

The original hypotheses for this study proposed that there would be main effects of political ideology, empathy, and conformity on beliefs about wearing a mask and COVID-19 behaviors; in addition, it was proposed that political ideology would interact with belief in science, empathy, and conformity to predict those dependent variables. However, there was not enough variability in the data on belief in science, empathy and conformity to include these variables as categorical predictors to explore either the hypothesized main effects or the interactions. Therefore, I instead examined the relationships between these variables; then, I examined whether political ideology (liberals, moderates, and conservatives), differed in their mask-wearing behaviors, attitudes toward COVID-19, belief in science, empathy, and tendency toward conformity.

Sometimes, a grim picture is painted of United States citizens when it comes to mask-wearing and COVID-19 behaviors. When examining whether these behaviors differed as a function of political ideology, there were significant differences in thoughts, feelings, and behaviors about mask wearing, with liberals tending to differ from both moderates and conservatives, and moderates and conservatives largely similar to each other. Still, the majority of participants followed public health guidelines regardless of their feelings about face masks. It may be that Americans are more likely to follow these guidelines than media reports would suggest. Interestingly, participants overall scored high on empathy and relatively low on conformity. Even though empathy scores skewed high and conformity scores skewed low, they were still related to certain aspects of positive public health behaviors; alternatively, it may be that participants' sense of

themselves as highly empathic or unlikely to conform is not part of decisions about COVID-safe behaviors; those may be largely a function of political ideology.

One of the most notable and unexpected findings was that there was no significant relationship between perceived mask efficacy and belief in science. This means that people who typically believe in science do not necessarily believe that masks work. It may be that people were heavily impacted by the fake news campaigns that claimed that masks do not work (Carlson, 2020), even though there are countless studies and instances that show that masks do work (CDC, 2020; Gandhi & Rutherford, 2020; Leonard et al., 2020; Dave et al., 2020). This shows that people's feelings surrounding mask efficacy may not be based on acceptance of science more generally, and instead driven by the construction of mask-wearing as a political stance. People who did not believe that masks worked also tended to think that authority should be questioned. It may be that people are viewing the government as the authority in this situation, and that questioning authority was equated with questioning the efficacy of masks in preventing COVID.

Although masks have been one of the more politicized symbols during the COVID-19 pandemic, other COVID attitudes were also related to beliefs about mask-wearing. This means that most attitudes are consistent when it comes to wearing a mask and COVID attitudes; for example, people who believed that masks are uncomfortable also believed that people were overreacting to COVID-19. One of the more interesting findings was that people who find masks to be inconvenient reported less empathy, struggled to look at things from another perspective, and felt that they should be able to make their own decisions. These findings are consistent with other scholarship; people

who supported using a mask and believed that they offered protection for self, others, and the community were more likely to wear a mask (Fisher et al., 2020), and those who have higher levels of empathy tended to participate more in prosocial behavior (Eckland, Huang, & Berenbaum, 2020) and were more likely to wear a mask. It may be that people feel inconvenienced because they believe that wearing a mask is impeding on their rights as U.S. citizens, and they are not thinking about how their actions affect other people. Participants who believed that face masks were ugly and looked suspicious did not trust government information and were more likely to share information online that contradicted government information. It may be that the feeling of suspicion surrounding face masks could stem from distrust in government since the government is endorsing the use of face masks.

For most variables, there was no significant difference between moderates and conservatives, while there was almost always a significant difference between these two political groups and liberals; this suggests just how significantly political ideology impacts our daily lives and actions. Overwhelmingly, conservatives scored high on all the subscales of the Face Mask Perception Scale and COVID Attitude Networks Survey, which means that they have a negative outlook about face masks and are less likely to take COVID-19 seriously while following public health guidelines; liberals are the opposite of this. In addition, they scored lower in belief in science than either liberals or conservatives. This is consistent with the findings of Calvillo et al. (2020) who said that public health behaviors have become split along party lines where conservatives do not take the virus as seriously and do not engage in safe behaviors. The origins of these



political divides are clear; for example, former President Trump maintained for a period of time that COVID-19 was similar to the seasonal flu and that it was not anything to worry about (Beer, 2020), was vocal and public in his refusal to follow public health recommendations about mask-wearing and social distancing, and dismissive of the expertise of individuals such as Dr. Fauci (Luthra, 2020).

Although it was not possible to examine how political ideology interacted with empathy and conformity in predicting mask and COVID attitudes and behaviors, correlational analyses indicated that liberals scored higher on empathy and lower on conformity, while moderates and conservatives scored lower on empathy and higher on conformity; these findings may be behind the reasons that people choose their political beliefs. Liberal beliefs are more centered around social progress while conservative beliefs tend to be more focused on fiscal issues and keeping with tradition. Social progress is centered around empathy because people are choosing to fight for a better life for others, even if that change does not necessarily impact them personally. However, fiscal issues tend to be more selfishly motivated and continuing to keep traditional values and ideals fall more in line with high levels of conformity.

Given that conservatives reported that they respected common norms and values, it may be that a stronger campaign, based around the idea that everyone is wearing a mask and that wearing a mask was a common core value, might work to convince conservatives to wear a mask more often, as long as it was rooted in political ideology; in other words, it would need to be clear that *all conservatives* were engaging in these behaviors for the common good. If it is true that conservatives look more to their political

party than to the general public for the ideals to conform to, a campaign led by conservative politicians urging people to wear a mask may be the best course of action. Since there were and still are conservative politicians saying that masks impede upon personal freedoms and, according to this study, conservatives tend to forego their personal freedoms over fear of disorder. When it comes to wearing a mask, conservatives are choosing their personal freedom so they clearly respect politicians and what they say means something to people (Haischer et al., 2020).

The fact that moderates regularly sided with conservatives was unexpected. Due to the nature of moderates, it would have made more sense for them to have a relatively even split between having significant differences with conservatives and liberals. Since they sided on almost everything with conservatives, it may be that most moderates in the United States tend to be more conservative than liberal. This also might mean that moderates are “closet conservatives” in the fact that they do not want to be included in one group or another but tend to hold similar ideals to conservatives than liberals.

### **Limitations of the Study and Future Directions**

The method of recruiting participants, M-Turk, could be one limitation of the study. The people who take part in this program have to be competent when it comes to computer use and this could impact the types of participants that were included. MTurk workers are slightly more likely to be women, tend to be on the younger side, and are very likely to be white (Moss & Litman, 2020). Although there was still variability in the sample on some variables, like political ideology, we should be cautious in assuming the generalizability of these findings.

In addition, because this research relied upon self-reported data, it is likely that social desirability impacted the findings; some of the variables, like empathy and belief in science, are considered favorable traits and so it may be that people self-report that they have more empathy and adhere to scientific findings more than they actually do. The face validity of this variable is relatively high; in other words, the wording of questions made it very clear how an empathic person or a science-friendly person would respond so participants were therefore able to answer, and may have answered, these questions in what is considered to be a socially desirable fashion.

Additionally, the data for this study was collected on January 5th, 2021; while this data may adequately reflect people's thoughts, feelings, and behaviors surrounding COVID-19 and face masks on January 5th, information around both COVID-19 and the political landscape are constantly changing, and people's beliefs and attitudes around COVID-19 are likely changing as well. At the time of data collection, emotions were still running high after the presidential election in November, but the Capitol riots had not yet happened; everything was politically charged. When I first began this research, vaccines were being tested but were not yet publicly available. Now, the United States is close to the point where everyone who wants a vaccine has been able to get one and people may feel more comfortable not wearing masks outside of their house. Other behaviors, such as gathering in large groups or lack of hand hygiene might change as well. People are also experiencing lockdown fatigue and are craving normalcy; they might use vaccines as an excuse to begin acting like the pandemic is over. With this possibility looming, and recent spikes in COVID-19 outbreaks providing some evidence that people may be

relaxing COVID-19 precautions (Broaddus & Kirkos, 2021), the CDC is still recommending that people continue to wear masks, regardless of if they have been vaccinated (CDC, 2021).

On the other hand, the country is reaching a point where most people who want to get the vaccine have gotten it but a large portion of the population still is not comfortable with getting vaccinated. According to a poll sponsored by PBS NewsHour, NPR, and Marist, 41% of Republicans do not plan on getting vaccinated (Alcindor, Fritz, Wellford, & Jacobson, 2021). Although Trump is discussing the possibility of doing a pro-vaccine commercial, which might increase vaccine compliance among conservatives in particular, the number of vaccinated individuals will likely still be too low to reach herd immunity (Brumfiel, 2021).

Future research on this topic is necessary; despite advances in vaccination, the COVID-19 pandemic is far from over. It is critical to better understand the predictors of the range of public health behaviors that will ultimately serve to bring the pandemic under control. In future research, a larger and more representative sample of participants is crucial to effectively look at all of the questions that were originally asked in this study. Researchers might also want to try and reduce the face value of questions that involve social desirability, like the empathy and belief in science variables. Additionally, it would be interesting to focus on groups that do not fall along the behavioral lines of their political ideology. For example, there might be liberals that do not necessarily engage in safe public health behaviors, like college students, and there might be conservatives who are getting vaccinated and wearing masks. As the United States is

getting further into vaccinating its entire population, there is a space for research on how to incentivize the vaccine for those who might be less inclined to get inoculated or incentivize safe public health behaviors.

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## Appendix A

### Face Mask Perception Scale (Howard, 2020)

#### 7-Point Likert Scale

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree

#### Comfort

1. Face masks disrupt my breathing.
2. It is difficult to breathe when wearing a face mask.
3. Face masks cause me to overheat.
4. Face masks get too hot.

#### Efficacy Doubts

5. Face masks provide few health benefits.
6. Face masks just provide a false sense of security.
7. Face masks are ineffective.
8. Face masks are unsafe because they force you to touch your face.

#### Access

9. I do not know where to buy a face mask.
10. There is nowhere for me to buy the proper type of face mask.
11. It is difficult to get a face mask.
12. Face masks are too expensive.

#### Compensation

13. I stay away from people when I go out.

14. I already social distance.

15. I can avoid people when I go out anyways.

16. I only go out for a short period of time.

#### Inconvenience

17. I do not like remembering to wear a face mask.

18. I forget to wear a face mask when going out.

19. Wearing a face mask is too much of a hassle.

20. It is hard to develop the habit of wearing a face mask.

#### Appearance

21. Face masks look dumb.

22. Face masks look silly.

23. Face masks are ugly.

24. Face masks look weird.

#### Attention

25. Face masks make people seem untrustworthy.

26. Face masks make people look suspicious.

27. Face masks make others uncomfortable.

28. Face masks make other people feel uneasy.

#### Independence

29. I do not like feeling forced to do something.

30. I do not like blindly following suggestions.



31. I value my independence.

32. I want to prove a point against authority.

## Appendix B

### Belief in Science Scale (Farias, Newheiser, Kahane, and de Toledo, 2013)

#### 7-Point Likert Scale

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree

1. Science provides us with a better understanding of the universe than does religion.
2. “In a demon-haunted world, science is a candle in the dark.” (Carl Sagan)
3. We can only rationally believe in what is scientifically provable.
4. Science tells us everything there is to know about what reality consists of.
5. All the tasks human beings face are soluble by science.
6. The scientific method is the only reliable path to knowledge.
7. The only real kind of knowledge we can have is scientific knowledge.
8. Science is the most valuable part of human culture.
9. Science is the most efficient means of attaining truth.
10. Scientists and science should be given more respect in modern society.

## Appendix C

### COVID Attitude Networks Survey (Maher, MacCarron, & Quayle, 2020)

#### 7-Point Likert Scale

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Strongly Agree

#### Behavioral Compliance Scale

1. I have increased the number of times I washed my hands.
2. I have increased the time I spend on each hand wash.
3. I have avoided contact with certain people.
4. I have been proactive in reducing the number of times I shake hands with others.
5. I have tried to avoid touching my face.

#### Hoarding and Misinformation

6. I have purchased more sanitary products than normal (e.g. soap or hand sanitizer).
7. I trust the information being given by the government about COVID-19.
8. I have liked or shared information on social media that contradicts government information.

#### Epistemic Clarity

9. I understand why people must take extra precautions to prevent the spread of COVID-19.
10. The measures people are taking for preventing the spread of COVID-19 make sense to me.

11. Taking extra measures to prevent the spread of COVID-19 is a meaningful thing to do.

Additional Questions

12. How many times have you washed your hands in the last 24 hours? (Behavioral Compliance Scale)

13. How many times have you shaken hands with someone in the last 24 hours? (Behavioral Compliance Scale)

14. How likely are you to eat indoors at a restaurant?\*

- a. Extremely likely
- b. Moderately likely
- c. Slightly likely
- d. Neither likely nor unlikely
- e. Slightly unlikely
- f. Moderately unlikely
- g. Extremely unlikely

15. Please check off all of the social situations where you would typically wear a mask:\*

- a. I never wear a mask
- b. I wear a mask only in public situations where it is mandated and enforced (e.g., going into a store that has a mask policy, in an educational setting, etc.)
- c. I wear a mask in all public indoor environments

- d. I wear a mask in outdoor public environments where social distancing might be difficult
- e. I wear a mask in outdoor public environments
- f. I wear a mask in indoor social situations when I am with people not in my “bubble”
- g. I wear a mask in indoor social situations even with people in my “bubble”

**\*Items added by researcher**

## Appendix D

### Ideological Consistency Scale (Pew Research Center, 2014)

Statements in italics reflect the conservative position while non-italicized statements reflect the liberal position.

1. Which statement do you most agree with?
  - a. *Government is almost always wasteful and inefficient*
  - b. Government often does a better job than people give it credit for
2. Which statement do you most agree with?
  - a. *Government regulation of business usually does more harm than good*
  - b. Government regulation of business is necessary to protect the public interest
3. Which statement do you most agree with?
  - a. *Poor people today have it easy because they can get government benefits without doing anything in return*
  - b. Poor people have hard lives because government benefits don't go far enough to help them live decently
4. Which statement do you most agree with?
  - a. *The government today can't afford to do much more to help the needy*
  - b. The government should do more to help needy Americans, even if it means going deeper into debt
5. Which statement do you most agree with?

- a. *Blacks who can't get ahead in this country are mostly responsible for their own condition*
  - b. Racial discrimination is the main reason why many black people can't get ahead these days
6. Which statement do you most agree with?
- a. *Immigrants today are a burden on our country because they take our jobs, housing and health care*
  - b. Immigrants today strengthen our country because of their hard work and talents
7. Which statement do you most agree with?
- a. *The best way to ensure peace is through military strength*
  - b. Good diplomacy is the best way to ensure peace
8. Which statement do you most agree with?
- a. *Most corporations make a fair and reasonable amount of profit*
  - b. Business corporations make too much profit
9. Which statement do you most agree with?
- a. *Stricter environmental laws and regulations cost too many jobs and hurt the economy*
  - b. Stricter environmental laws and regulations are worth the cost
10. Which statement do you most agree with?
- a. *Homosexuality should be discouraged by society*
  - b. Homosexuality should be accepted by society

## Appendix E

### Interpersonal Reactivity Index (Davis, 1980)

#### 5-Point Likert Scale

1	2	3	4	5
Does Not Describe Me	Describes Me Slightly Well	Describes Me Moderately Well	Describes Me Very Well	Describes Me Extremely Well

PT = Perspective-Taking Scale

FS = Fantasy Scale

EC = Empathy Concern Scale

PD = Personal Distress Scale

(-) denotes item to be scored in reverse fashion

1. I daydream and fantasize, with some regularity, about things that might happen to me. (FS)
2. I often have tender, concerned feelings for people less fortunate than me. (EC)
3. I sometimes find it difficult to see things from the "other guy's" point of view. (PT) (-)
4. Sometimes I don't feel very sorry for other people when they are having problems. (EC) (-)
5. I really get involved with the feelings of the characters in a novel. (FS)
6. In emergency situations, I feel apprehensive and ill-at-ease. (PD)
7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it. (FS) (-)
8. I try to look at everybody's side of a disagreement before I make a decision. (PT)



9. When I see someone being taken advantage of, I feel kind of protective towards them. (EC)
10. I sometimes feel helpless when I am in the middle of a very emotional situation. (PD)
11. I sometimes try to understand my friends better by imagining how things look from their perspective. (PT)
12. Becoming extremely involved in a good book or movie is somewhat rare for me. (FS) (-)
13. When I see someone get hurt, I tend to remain calm. (PD) (-)
14. Other people's misfortunes do not usually disturb me a great deal. (EC) (-)
15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (PT) (-)
16. After seeing a play or movie, I have felt as though I were one of the characters. (FS)
17. Being in a tense emotional situation scares me. (PD)
18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (EC) (-)
19. I am usually pretty effective in dealing with emergencies. (PD) (-)
20. I am often quite touched by things that I see happen (EC)
21. I believe that there are two sides to every question and try to look at them both. (PT)
22. I would describe myself as a pretty soft-hearted person. (EC)

23. When I watch a good movie, I can very easily put myself in the place of a leading character. (FS)
24. I tend to lose control during emergencies. (PD)
25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while. (PT)
26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me. (FS)
27. When I see someone who badly needs help in an emergency, I go to pieces. (PD)
28. Before criticizing somebody, I try to imagine how I would feel if I were in their place. (PT)

## Appendix F

### Social Conformity vs Autonomy Scale (Feldman, 2003)

Statements in italics reflect endorsement of social conformity and non-italicized statements reflect endorsement of personal autonomy.

#### Conformity Versus Autonomy

1. Which statement do you most agree with?
  - a. *It's best for everyone if people try to fit in instead of acting in unusual ways*
  - b. People should be encouraged to express themselves in unique and possibly unusual ways.
2. Which statement do you most agree with?
  - a. *Obedying the rules and fitting in are signs of a strong and healthy society*
  - b. People who continually emphasize the need for unity will only limit creativity and hurt our society.
3. Which statement do you most agree with?
  - a. We should admire people who go their own way without worrying about what others think
  - b. *People need to learn to fit in and get along with others.*

#### Freedom Versus Fear of Disorder

4. Which statement do you most agree with?
  - a. It is most important to give people all the freedom they need to express themselves

- b. *Our society will break down if we allow people to do or say anything they want.*

5. Which statement do you most agree with?

- a. *Society is always on the verge of disorder and lawlessness and only strict laws can prevent it.*
- b. It is more important to give people control over their lives than to create additional laws and regulations.

6. Which statement do you most agree with?

- a. People can only develop their true potential in a fully permissive society.
- b. *If we give people too much freedom there will just be more and more disorder in society.*

#### Respect for Common Norms and Values

7. Which statement do you most agree with?

- a. *Rules are there for people to follow, not to change.*
- b. Society's basic rules were created by people and so can always be changed by people.

8. Which statement do you most agree with?

- a. *People should not try to understand how society works but just accept the way it is*
- b. People should constantly try to question why things are the way they are.

9. Which statement do you most agree with?

- a. People should be guided more by their feelings and less by the rules.

- b. The only way to stay out of trouble is to respect the established rules of society.*

#### Social Cohesion

10. Which statement do you most agree with?

- a. People should be given the opportunity to hear all sides of a question, regardless of how controversial it is.
- b. If we cannot achieve agreement on our values we will never be able to keep this society together.*

11. Which statement do you most agree with?

- a. In the long run our cultural and ideological differences will make us a healthier, more creative, and stronger society.
- b. It is unlikely that this country will survive in the long run unless we can overcome our differences and disagreements.*

12. Which statement do you most agree with?

- a. Society should aim to protect citizens' right to live any way they choose.
- b. It is important to enforce the community's standards of right and wrong.*

#### Socialization and Child-Rearing Values

13. Which statement do you most agree with?

- a. Students must be encouraged to question established authorities and criticize the customs and traditions of society.
- b. One of the major aims of education should be to give students a few simple rules of behavior to make them better citizens.*

14. Which statement do you most agree with?

- a. *Young people sometimes get rebellious ideas but as they grow up they ought to get over them and settle down*
- b. If some people don't occasionally come up with rebellious ideas there would be less progress in the world.

15. Which statement do you most agree with?

- a. It may well be that children who talk back to their parents respect them more in the long run
- b. *Obedience and respect for authority are the most important virtues children should learn.*

16. Which statement do you most agree with?

- a. *Children should be taught to do what is right even though they may not always feel like it.*
- b. Children should be encouraged to express themselves even though parents may not always like it.

17. Which statement do you most agree with?

- a. *The most important values children should learn are love and respect for their parents.*
- b. The most important values children should learn are independence and self-reliance.

**Appendix G**  
**Pearson Correlation Matrices**

		<b>Face Mask Perception Scale</b>						<b>COVID Attitude Networks Survey</b>		
		Comfort	Efficacy	Access	Inconvenience	Appearance	Attention	Behavioral Compliance	Hoarding and Misinformation	Epistemic Clarity
<b>Face Mask Perception Scale</b>	Comfort	1								
	Efficacy	.78**	1							
	Access	.64**	.79**	1						
	Inconvenience	.79**	.84**	.80**	1					
	Appearance	.69**	.69**	.63**	.79**	1				
	Attention	.76**	.82**	.76**	.84**	.77**	1			
<b>COVID Attitude Networks Survey</b>	Behavioral Compliance	-0.05	-.17*	-0.08	-.16*	-0.11	-0.13	1		
	Hoarding and Misinformation	-.26**	-.38**	-.24**	-.31**	-.25**	-.31**	.58**	1	
	Epistemic Clarity	-.23**	-.36**	-.20**	-.32**	-.18**	-.24**	.79**	.57**	1

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

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