THE BEHAVIORAL IMMUNE SYSTEM AND ATTITUDES TOWARD COVID-19

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ABSTRACT

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The behavioral immune system acts as the first line of defense against harmful pathogens. One of the primary functions of this system is the emotion of disgust. It compels individuals to adopt socially conservative attitudes to avoid people and stimuli that could infect the individual with an unwanted disease. The COVID-19 pandemic has presented a unique opportunity to further examine these relationships. The purpose of the current research is to explore how social conservatism interacts with the behavioral immune system in the context of the COVID-19 pandemic. Data was collected by having participants complete an online survey. Social conservatism was found to be connected to attitudes about the pandemic. Those who are more conservative are less anxious about the pandemic, less knowledgeable about COVID-19, and have more favorable views towards the U.S. government's response to the pandemic.

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CHAPTER I

INTRODUCTION

The Behavioral Immune System

The behavioral immune system (BIS) evolved as a way to mitigate the spread of infection through behavior (Oaten et al., 2009; Schaller & Park, 2011). It acts as the first line of defense before the regular immune system gets involved (Schaller, 2006). The BIS reacts to stimuli that confer potential disease spread (Schaller, 2006). A typical reaction is disgust (Schaller, 2006). Stimuli that elicit disgust cause a behavioral reaction in the individual to mitigate potential harm to the self (Schaller, 2006). Reactivity of the BIS could cause a preference for one's in-group or socially conservative values (Schaller & Duncan 2007, as cited in Terrizzi & Shook, 2016). Indeed, socially conservative values are encouraged by the perceived threat of disease transmission (Terrizzi et al., 2013). Social distancing through both behavior and attitudes could act as a naturally selective strategy as a means of minimizing disease transmission.

The present study analyzes the effects of the BIS that influence attitudes towards the coronavirus and social attitudes such as political and religious beliefs. The purpose of this study is to examine the factors influenced by the BIS in connection to the coronavirus (COVID-19) pandemic, as COVID-19 activates the BIS through disease threat. The COVID-19 pandemic presents an especially opportune time to evaluate how the BIS is related to social attitudes as individuals attempt to live their lives in a disease-riddled world. Virtually every government has taken measures to mitigate the disastrous effects of the virus on their populations. The virus is reported to be highly infectious and more deadly than the common flu. On average, each

coronavirus-infected person spreads the disease to about 2.5 people (Center for Disease Control [CDC], 2020a). Globally, as of December 14th, 2020, there have been over 70 million confirmed cases and 1.5 million deaths (World Health Organization [WHO], 2020a). The symptomatic fatality ratio is approximately 0.4% (CDC, 2020a). Typically, influenza has a case fatality rate of approximately 0.1% (Fauci et al., 2020).

The BIS is typically related to conservatism (Inbar & Bloom, 2009; Terrizzi et al., 2010; Terrizzi et al., 2013). Socially conservative behaviors and attitudes are in many ways the same behaviors and attitudes that help curb the spread of disease; for instance, more negative opinions of immigration (prevents foreigners from spreading disease) and greater sensitivity to disgust (less likely to contract disease due to higher likelihood of rejection of potentially infectious stimuli). However, the COVID-19 pandemic has demonstrated an ironic political divide in how people are responding. Conservatives report wearing masks less frequently; only 49% of conservative Republicans report wearing a mask all the time or most of the time in the past month, while liberal Democrats report 83% and moderate Democrats report 71% (Igielnik, 2020). In a Pew poll released in June 2020, 63% of Democrats and democratic-leaning independents say that masks should be worn always versus 29% of Republicans or those leaning Republican (Pew Research, 2020). Additionally, only 4% of Democrats say masks should never be worn versus 23% of Republicans (Pew Research, 2020).

In a survey conducted between March 20–23, 2020, Republicans were less likely than Democrats to comply with CDC-recommended behavior, such as social distancing, and were less concerned about the pandemic (Gadarian et al., 2020). However, the same survey found that when framed as possible pandemic mitigation measures, Republicans were more likely to

endorse restricting foreign trade and restricting travel across borders (Gadarian et al., 2020). The authors found partisanship to be the most consistent factor in explaining differences in health behavior and public policy positions (Gadarian et al., 2020).

What is the reason for this ironic reaction? The pandemic has become politicized. An important factor in understanding how the pandemic has been politicized is looking at how the media has portrayed it. Fox News was the most-watched primetime news channel in May of 2020, with an average primetime viewership of 3.441 million viewers, while MSNBC trailed in second place with an average of 1.923 million viewers (Joyella, 2020). Fox News had a 44% increase in viewership from last year; additionally, CNN also had an increase in viewership during the pandemic, with a 117% increase, according to Nielson numbers (Joyella, 2020). The two most watched shows in cable news were Tucker Carlson's (4.231 million viewers) and Sean Hannity's (4.192 million viewers) shows (Joyella, 2020). The framing of the pandemic by the hosts of both programs correlated with their viewers' behavior and downstream health outcomes (Bursztyn et al., 2020). Carlson took the pandemic more seriously and informed his viewers of the threat it posed from early February, while Hannity downplayed the risks until late February (Bursztyn et al., 2020). Carlson's viewers changed their behavior earlier in response to COVID-19 than other Fox News viewers, and Hannity's changed their behavior later (Bursztyn et al., 2020). For every standard deviation increase in Hannity viewership relative to Carlson, there was an associated increase of approximately 32% COVID-19 cases on March 14, and 23% more COVID-19 deaths on March 28 (Bursztyn et al., 2020).

Partisan politics affect how the public reacts to public health crises. People frequently use heuristics, or shortcuts, to supplement their lack of information; political parties cue voters with

simple information so that they can compensate, allowing them to make better choices with limited knowledge (Leeper & Slothuus, 2014). There is little time for each individual to sit down and inform themselves about every issue, so they tend to rely on sources they trust; these sources often include experts and politicians. Reliance on expert and party endorsements provide low-effort means for an accuracy-motivated voter to make decisions (Leeper & Slothuus, 2014). Impressions gained from these sources strongly influence an individual's attitudes and consequent behavior. Messaging from President Donald Trump has frequently downplayed the significance and severity of the pandemic by comparing it to the seasonal flu, and claiming testing was widely available, which contradicted public health officials, who had complained that access to testing was limited (Qiu & Bouchard, 2020). The president further stoked the partisan flames by retweeting a post criticizing the Obama administration's response to the swine flu epidemic (Qiu & Bouchard, 2020). In the second week of the shutdown in March, 2020, the president questioned if the government went too far in restricting the economy to limit the spread of infection and considered lifting restrictions in direct conflict with health experts' recommendation that the shutdown should continue for at least a few more weeks (Tankersly et al., 2020). With such explicit messaging from the president guiding the attitude of his followers, the pandemic became politicized; even those who do not follow the news closely can get a strong impression from how the president is framing the issue. And the current president is the most partisan in modern history, with approval ratings tracking almost directly with party affiliation (Jones, 2019).

The importance in how issues are framed by leaders of political parties is demonstrated by the possible effect it has on the attitudes of those who identify with those parties. One of the

areas that has been looked into is how tribalism accounts for attitudes and behaviors within party politics. Tribalism is theorized to cause individuals to prefer their political party. Indeed, liberals and conservatives endorse more discrimination against groups that do not hold their values, avoid writing counter-attitudinal essays, are intolerant towards ideological outgroups, and have negative reactions to interpretations of information that conflicts with their values (Clark et al., 2019). Political tribalism is suspected to be involved in how partisans behave and form attitudes in response to the COVID-19 pandemic. In previous research, it has been shown that participants attribute more selfish motivations to people they disagree with on support of the Iraq war (Reeder et al., 2005). Furthermore, biased attributions of motive were mostly present in people who had stronger opinions of the issue (Reeder et al., 2005). Given the tribalism involved in politics and the politicization of the pandemic, it is suspected that political identity will be associated with opinions about the pandemic.

Anxiety about the coronavirus pandemic could be an indicator of BIS strength or reactivity for those who believe it is a problem. One goal of the present study is to understand how anxiety about the pandemic is related to previously known psychological constructs implicated in the functioning of the BIS. Constructs measured include disgust, anxiety about the COVID-19 pandemic, attitudes towards vaccinations, basic knowledge about the COVID-19 pandemic, RWA, and left-wing authoritarianism (LWA).

CHAPTER II

LITERATURE REVIEW

On December 31, 2019, China reported a cluster of pneumonia cases in Wuhan (WHO, 2020b). On March 11, 2020, WHO declared COVID-19 a pandemic (WHO, 2020b). On the same day, the United States started shutting down borders and blocking visitors from entering the country (Baker, 2020). COVID-19 is characterized as having flu-like symptoms including fever, cough, fatigue, body aches, congestion or runny nose, vomiting, and diarrhea as well as the loss of taste or smell (CDC, 2020b). Symptoms tend to appear 2–14 days after exposure (CDC, 2020b). The coronavirus pandemic should trigger the activation of the BIS on some level. Although, this activation varies across individuals based on their innate responsiveness as well as their perception of how serious they think the disease is.

Some have suggested that harmful pathogens have acted as a selective pressure on our species (Curtis & Biran, 2001). Theoretically, those with a behavioral tendency to avoid contact with parasites and pathogens would have possessed an advantage for their survival and reproduction (Curtis & Biran, 2001). This evolutionarily adaptive mechanism to behaviorally avoid infectious diseases is the BIS (Schaller & Park, 2011). The BIS is a proactive and reactive strategy for avoiding contamination with infectious diseases. It is proactive by instilling traits and attitudes that are more inclined to err on the side of caution, and reactive by inducing a behavior response (such as disgust) to noxious stimuli. The threat of disease likely influences people to adopt socially conservative values that promote avoidance of out-group members (Terrizzi & Shook, 2016). Anti-immigration attitudes could operate, in part, as a way to prevent

the spread of disease from out-group members. Prejudice against gay men and lesbian women, RWA, and in-group favorability and out-group derogation can be linked to the BIS (Hodson, & Costello, 2007, Navarrete & Fessler, 2006, Patev et al. 2019, Terrizzi et al., 2010).

One of the most prominent features of the BIS is the disgust reaction. Stimuli in the environment that activate the BIS tend to activate the disgust response — the scrunching of the nose, the feeling of repulsion, and the distancing of the self away from the disgusting stimuli. Possessing an inherently more reactive BIS would tend to lower the threshold for stimuli to induce disgust. Since disgust sensitivity can be conceived as a measure of general BIS reactivity, it should be correlated to other measures of BIS reactivity, such as fear of contracting diseases. Indeed, Cisler et al. (2007) found anxiety sensitivity and disgust sensitivity independently predicted contamination fear. Furthermore, anxiety sensitivity, disgust propensity, and disgust sensitivity predict fear of contracting COVID-19 (Mckay et al., 2020).

The BIS can affect how we interpret our reality. Inducing BIS reactivity can cause stimuli that are irrelevant from the BIS to become negatively valenced. For example, Leathers-Smith and Davey (2011) had participants complete a homophone task to determine if inducing anxiety or disgust affected homophone interpretations. They found participants who were induced to feel anxiety or disgust interpreted more homophones in a threatening way.

In addition to making information negatively valenced, disgust can influence what we attend to and, consequently, what we learn. When participants read an excerpt of a recent public health issue, inducing disgust caused participants to recall information related to disgust but also disrupted participants' learning of information not related to the emotional response (Clifford & Jerit, 2018). Disgusted individuals were less likely to learn facts about the threat and seek more

information (Clifford & Jerit, 2018). Given these results, one would expect during the COVID-19 pandemic, disgusted individuals would pay attention to and learn information related to the emotional response of disgust, but not more general information about the threat. Disgust will narrow the individual's attention on the disgusting aspect of the threat while drawing attention away from information not endemic to the disgust response.

Disease Salience and Politics

The BIS encourages people to avoid people that could carry infectious diseases. Bodily fluids that carry disease are disgusting. We would be justifiably disgusted if someone were to sneeze directly into our face. So over time, our systems evolved to understand how to avoid stimuli that confer potential infection; the variance in that response to disgusting stimuli range from being most likely to make a type 2 error (false negative; in this instance would be to become infected by something that was presumed to be not infectious) to most likely to make a type 1 error (false positive; to presume something is infectious when it is not). Attitudes, beliefs, and traits that are further on the type 1 error side of the spectrum
encourage socially conservative values. These values are at least partially defined as keeping the threat of disease spread to a minimum. Negative opinion on immigration helps prevent pathogens, such as COVID-19, from spreading. RWA in many ways encapsulates the extreme version of these attitudes.

Shook et al. (2017) found individuals that were higher in disgust sensitivity were more likely to endorse a dangerous worldview and values that are socially conservative. The relationship between disgust sensitivity and social conservatism was mediated by dangerous worldview (Shook et al., 2017).

Furthermore, disgust sensitivity has been shown to be related to voting preferences. In the 2012 U.S. election, Shook, Oosterhoff et al. (2017) found greater disgust sensitivity was associated with lower intention to vote for Obama versus Romney and lower likelihood of voting for Obama (Shook, Oosterhoff et al., 2017). Disgust sensitivity was associated with conservative values, greater likelihood of Republican Party affiliation and lower likelihood of Democratic Party affiliation (Shook, Oosterhoff et al., 2017).

It appears voting preferences are affected by both dispositional sensitivity to the threat of disease and salient threat of disease. According to Beall et al. (2016), an Ebola outbreak influenced the 2014 U.S. federal elections. Psychological salience of the virus increased intention to vote for Republican candidates, but mostly in areas where voting Republican was the norm (Beall et al., 2016). Nationwide support for Republican candidates, relative to Democratic candidates, increased from M = .40% to M = 1.55% (Beall et al., 2016). This has been shown in Swiss participants as well; when avian influenza was salient, unfavorable attitudes toward foreigners increased beliefs in the efficacy of foreigner avoidance as a disease avoidance mechanism (Krings et al., 2012). The relation between disease salience and foreigner avoidance beliefs was restricted to those with unfavorable attitudes toward foreigners (Krings et al., 2012).

Right-Wing Authoritarianism

Downstream effects of the BIS include RWA and hostile sexism. In a study on how the BIS affects stigmatizing attitudes, such as hostile sexism, Patev et al. (2019) found many significant correlations between sexual disgust, abortion stigmatizing attitudes, hostile sexism, and RWA. There is a connection between sexual disgust and abortion stigmatizing attitudes, which are mediated first by hostile sexism, then by RWA (Patev et al. 2019). Higher sexual

disgust correlated with higher hostile sexism (Patev et al. 2019). Higher hostile sexism was correlated with higher RWA that was then associated with more stigmatizing attitudes (Patev et al. 2019). Furthermore, Liuzza et al. (2017) found body-odor disgust sensitivity had a correlation with RWA of $r = 0.39$. The relationship between body-odor disgust sensitivity and attitudes towards Donald Trump was fully mediated by RWA (Liuzza et al, 2017).

Disgust and The Left Wing

Our moral values are connected to our propensity to feel disgust. Disgust is a natural response to impurity as well as inequality. Evidence supports that the BIS influences left-wing attitudes as well as right-wing. While transgressions for social conservatism are violations of purity, transgressions for the left-wing are violations of fairness and equality (Petrescu & Parkinson, 2014). Petrescu and Parkinson (2014) found that inducing disgust in participants through photographs caused them to report more left-wing economic attitudes than participants that were exposed to images inducing sadness. Another study found inducing disgust moved participants in a general leftward political direction (Petrescu & Parkinson, 2014). The authors claim inducing disgust produced more equality-promoting values (Petrescu & Parkinson, 2014).

There is little research, if any, on the connection of LWA and disgust sensitivity. Since disgust sensitivity is linked to political conservatism (Inbar et al., 2012; Terrizzi et al., 2010), one would expect left-wing ideology to be negatively correlated with disgust sensitivity. Disgust sensitivity predicts more extreme deontological judgment, which is mediated by preference for order, such as RWA and intolerance for ambiguity (Robinson et al., 2019). Intolerance for ambiguity could be a common denominator between both wings of authoritarianism.

Vaccine Attitudes

People with higher dispositional sensitivity to disgust tend to have more negative attitudes about vaccines (Clay, 2017). Disgust sensitivity and germ aversion have a direct positive effect on vaccine uptake and an indirect negative effect on vaccine attitudes (Luz et al., 2019). Anti-vaccination attitudes are higher in those that report higher levels of disgust towards needles and blood (Hornsey et al., 2018).

Pathogen disgust sensitivity is associated with greater belief that vaccines cause autism (Clifford & Wendell, 2016). Pathogen disgust sensitivity also predicts skepticism of the safety and efficacy of vaccines (Clifford & Wendell, 2016).

In a fairly representative sample collected in May 2020, balanced by age, gender, ethnicity, socioeconomic status, and geographic region, 25% of Americans said they would not get vaccinated for COVID-19 once a vaccine is available (Taylor et al., 2020).

While studying attitudes surrounding a measles outbreak in early 2017, Justwan et al. (2019) found proximity to the outbreak had no effect on vaccination attitudes. Additionally, they found proximity had an interactive relationship with trust in government medical experts. People with low trust in governmental experts who did not live near an outbreak had more negative views about vaccinations towards that specific disease than low trust individuals who lived near the outbreak (Justwan et al., 2019).

Parents that are vaccine hesitant have less trust in physicians and greater sensitivity to disgust (Reuben et al., 2020). Sexual disgust was the primary disgust type that predicted vaccine hesitancy (Reuben et al., 2020). Pathogen and sexual disgust were higher in the high parental vaccine hesitancy group than the low parental vaccine hesitancy group (Reuben et al., 2020).

Furthermore, the authors found greater vaccine hesitancy associated with higher levels of religiosity, younger age, and lower levels of education (Reuben et al., 2020).

Group Dynamics

The connection between disgust sensitivity and inter/intra-group attitudes has been theorized to be due to out-groups posing pathogen threat by harboring and transmitting diseases or by their foreign cleanliness practices. Therefore, people more sensitive to disgust may be more inclined to favor their in-group to avoid pathogenic threat. Ethnocentric attitudes increase with perceived disease vulnerability (Navarrete & Fessler, 2006). Additionally, in-group attraction increases with sensitivity to disgust (Navarrete & Fessler, 2006). Chronic disease worry predicts implicit association of out-groups with danger, and less positive attitudes towards unfamiliar immigrant groups (Faulkner et al., 2004). Out-group derogation could be a downstream effect of the behavioral immune system. Disgusted individuals draw stronger associations between out-groups and animals, and in-group with humanity, than control groups (Buckels & Trapnell, 2013). Disgust sensitivity predicts negative attitudes towards foreigners, immigrants, and socially devious groups (Hodson, & Costello, 2007). Ritter & Preston (2011) conducted two experiments to see if writing out passages from an out-group religion would increase disgust in a taste test. Christians showed increased disgust after writing a passage from the Qur'an and Richard Dawkins' *The God Delusion* (Ritter & Preston, 2011). In the second experiment, participants did not show increased disgust from writing a passage from their in-group's religious text (i.e., Christians copying a passage from the Bible; Ritter & Preston, 2011). Additionally, in the second experiment, participants' increased disgust from rejected beliefs was eliminated by allowing participants to wash their hands (Ritter & Preston, 2011). Because of the

BIS's influence on group dynamics, events that the system is designed to respond to, such as pathogen stress, can have impacts on social groups. Strength of family ties, religious affiliation, religious participation, and in-group assortative sociality can be predicted by parasite stress throughout world regions (Fincher & Thornhill, 2012). In the US, parasite stress predicts collectivism and family ties, religious affiliation, religious participation, and in-group assortative sociality (Fincher & Thornhill, 2012)

The link between pathogen avoidance and opposition to immigration has been elucidated recently. Karinen et al. (2019) ran experiments to determine if people who are more pathogen avoidant, or disgust sensitive, oppose immigration for the direct threat of immigrants carrying novel pathogens or due to their foreign norms and practices posing an increased risk to pathogen threat. The authors determined that the link between disgust sensitivity and pathogen avoidance was explained by the data, in that people who oppose immigration do so out of opposition to their norms rather than out of concern for their level of contact (Karinen et al., 2019). The difference in anti-immigrant sentiments for people who were more disgust sensitive were much higher in hypothetical scenarios where the immigrant was depicted as not assimilating to hygiene norms than in scenarios where the immigrant was depicted as being in higher contact with people who grew up in the US (Karinen et al., 2019). In other words, greater variance in anti-immigration attitudes was due to level of assimilation than by level of contact with the locals. This study presents evidence contradictory to the novel pathogen threat theory of anti-immigration attitudes; the reason disgust sensitive people are against immigration is due more to how immigrants are perceived as not assimilating to local norms rather than the threat they pose as harbors of novel foreign pathogens, as demonstrated by the contact condition.

The threat of disease causes people to increase favorability of their in-groups. Groups give people both resources and support to lean on in stressful times as well as herd immunity to diseases the group is more familiar with. Given this evolutionary behavior, there should be a link between disease salience and conformity. Indeed, perceived vulnerability to disease (PVD) and conformity have been found to be significantly correlated (r = .30; Wu & Chang, 2012). Furthermore, in an experiment where participants rate their opinions of art that is paired with fictional likability ratings, participants show higher conformity (closer self-reported opinion of the art to the group's opinion) under the pathogen salient condition (Wu & Chang, 2012). Given the behavioral immune system's proclivity to favor in-groups, one would expect disgust sensitivity to cause a greater affinity towards one's political in-group.

Government

Disgust sensitivity should be positively correlated with positive perception of Republican politicians and offices held by them for Republicans, and negatively correlated for Democrats, because of increased in-group favoritism. The BIS has evolved to encourage in-group favoritism as it can increase survivability through better relations with the in-group.

When there are events that lead to lower faith in either system of external control (God or government), there is a subsequent increase in faith in the other (Kay et al., 2010). Students at a Malaysian university believed in a controlling god significantly more when they perceived their government to be less stable (Kay et al., 2010). In a second study, Canadian participants were given fictitious news articles describing if minority political parties were either likely or unlikely to unite to enact a no-confidence vote that would lead to an election to change the structure of the government. Participants who read the lower government stability vignette had stronger beliefs

in a controlling god than those that read the higher government stability vignette (Kay et al., 2010).

Since the BIS produces attitudes that favor the in-group, the pathogen threat presented by the COVID-19 pandemic should produce greater political in-group favoritism. The current study predicts those that are more sensitive to disgust will have a more positive opinion on the U.S government's (a presently right-wing institution) response to the COVID-19 pandemic for right-wing individuals and a more negative opinion for those on the left.

News

How people think about and respond to the pandemic is likely going to be influenced by the sources they get their news from. In a nationwide survey, Pew Research Center (Mitchell et al., 2020) grouped respondents by the sources of news they get their information about the COVID-19 pandemic from, they were: Trump and the White House task force, local news outlets, state and local officials, national news outlets, or public health organizations. From the group that relies most on Trump and the task force, 51% say the outbreak has been made a bigger deal than it really is, while only 8% of say the pandemic has been downplayed too much (Mitchell et al., 2020). Sixteen percent of U.S. adults rely on the White House for information about the pandemic (Mitchell et al., 2020). Of this group, 92% are Republicans, which comprises about a third of all Republicans in America (Mitchell et al., 2020). The White House group is on one end of the spectrum, with the group that relies on public health organizations on the other. In the latter group, 17% think the pandemic was overblown, while 40% thought the pandemic was being downplayed (Mitchell et al., 2020). In the sample, 26% of Americans got their coronavirus news from national news outlets, 18% from public health organizations and officials, 18% from

local news, 16% from the White House, 9% from state and local elected officials, and 13% from other sources (Mitchell et al., 2020).

Hypotheses

H1: Disgust sensitivity will be negatively correlated with LWA.

H2: Disgust sensitivity will be positively correlated with RWA.

H3: Disgust sensitivity will be positively correlated with anti-vaccination attitudes.

H4: LWA will be positively correlated with anxiety about COVID-19, and RWA will be negatively correlated with anxiety about COVID-19.

H5: LWA will be positively correlated with knowledge about COVID-19, and RWA will be negatively correlated with knowledge about COVID-19.

H6: LWA will be negatively correlated with favorable attitudes towards the U.S. government's response to the pandemic, and RWA will be positively correlated with favorable attitudes towards the U.S. government's response to the pandemic.

H7: An interaction is anticipated between disgust sensitivity and political orientation in predicting anxiety about the COVID-19 pandemic such that for liberals, disgust sensitivity will predict more anxiety about the pandemic, and for conservatives, disgust sensitivity will predict less anxiety about the pandemic.

H8: An interaction is anticipated between disgust and political orientation in predicting knowledge about the COVID-19 pandemic such that for liberals, disgust will predict more knowledge about the pandemic, and for conservatives, disgust will predict less knowledge about the pandemic.

H9: An interaction is anticipated between disgust sensitivity and political orientation in predicting favorability to the U.S. government's response to the COVID-19 pandemic such that for conservatives, disgust sensitivity will predict more favorable attitudes towards the government's response, and for liberals, disgust sensitivity will predict less favorable attitudes towards the government's response.

CHAPTER III

METHODOLOGY

Participants

Participants were recruited through a mass email sent to addresses associated with Texas Woman's University, social media, and snowball sampling. The study was conducted online through PsychData. A total of 183 responses were received to the questionnaire, with 45 responses discarded due to premature abandonment of the study and one discarded for being under 18, leaving 137 (18 males [13%], 98 females [72%], 4 other [3%] 17 no response [12%]; median age: 30 years old). The final sample of 137 exceeds the recommended sample size of n = 119 by an a priori power analysis (G*Power; Version 3.1; Faul et al., 2007). Demographic information on the participants was collected (see Table 1). Ninety-seven participants (80%) identified as white. One hundred twenty participants identified with a political party (15 Republican [11%], 57 Democrat [42%], 26 Independent [19%], 21 something else [15%], 18 no response [13%]). Sixty-four participants (46%) have had a negative impact on their financial situation by COVID-19, while 61 (45%) indicated they have not, 12 (9%) did not answer. Thirty-three participants (24%) indicated they experienced job loss or had their hours reduced due to COVID-19, 90 (66%) said they had not, while 14 participants did not answer (10%). Ninety-four participants (68.6%) knew someone who had contracted COVID-19, while 9 (7%) had personally contracted the disease. Eighty-one participants (59%) indicated likelihood of voting for Joe Biden, while 22 participants (16%) indicated likelihood of voting for Donald Trump.

Table 1

Demographics

	n	*%*
Gender		
Female	98	72%
Male	13	9%
Other	4	3%
Race		
White	97	71%
African American	6	4%
Asian	6	4%
Caribbean	1	1%
Hispanic	15	11%
Native American	1	1%
Other	3	2%
Religion		
Protestant	39	28%
Catholic	16	12%
Buddhist	1	1%
Not religious	18	13%
Muslim	1	1%
Jewish	5	4%
Atheist	14	10%
Agnostic	15	11%
Other	11	8%
Education		
less than High school	1	1%
High school	12	9%
Some college	29	21%
Bachelor's degree	43	31%
Master's degree	27	20%
PhD	9	7%
Political Party		
Republican	15	11%
Democrat	57	42%
Independent	26	19%
Something else	21	15%

Note. Percentages do not add up to 100 as some participants did not volunteer demographic information.

Median age of participants was 30 years old (SD = 13.8).

Procedure

Participants followed the PsychData link, read the consent form, and selected the option indicating that they consented to the study. The consent form informed participants that they may choose to abandon the study at any point at no cost to them. They then followed the instructions, read the questions, and selected the answers in the questionnaire that most described them. There are a total 178 questions. The consent form informed participants that the study should take about 45 minutes to complete. Constructs measured in this study include disgust sensitivity, PVD, anxiety about the coronavirus, perception of government's response, knowledge about the coronavirus pandemic, intent to vaccinate, RWA, LWA, vaccination opinions and knowledge, and demographic information on age, ethnicity, race, gender, education, religious affiliation, location, political orientation, and personal experience with the pandemic. At the end of the study, participants are thanked for participating before leaving the website. There was no reward for participating in this study.

An online survey was sent out between September 2 and October 14, 2020 to students and faculty at three college campuses in Texas and on various social media websites.

Disgust sensitivity was measured through two scales. The first scale is the Disgust Scale (Haidt et al., 1994). This scale is composed of two parts with a total of 32 questions. The first half of the questions ask how much participants agree with the questions on a scale of 1 to 4, 1 being *strongly disagree* and 4 being *strongly agree*. The second half of questions asks participants to indicate how disgusting the hypothetical is on a scale of 1 to 4, 1 being *not disgusting at all* and 4 being *very disgusting*. Sample items from the scale include "*I might be*

willing to try eating monkey meat, under some circumstances." from the first half, and from the second half, "*You see a man with his intestines exposed after an accident.*" This scale consistently exhibits Cronbach Alphas of .80 or higher (Haidt et al., 1994); in the present study α = .89.

The second disgust sensitivity scale is the Three Domain Disgust Scale (TDDS; Tybur, 2009). The TDDS consists of 21 questions with seven items of each domain (pathogen, sexual, and moral). Participants are asked to rate how disgusting they find each item on a Likert scale of 1 to 7 (1 means the item is *not disgusting at all*, and 7 means the item is *extremely disgusting*). A sample of a question from the pathogen subscale is *"Stepping on dog poop;"* from the sexual subscale, "*Watching a pornographic video;*" and from the moral subscale "*Forging someone's signature on a legal document.*" All subscales' Cronbach's alphas are above .80 (Tybur, 2009); in the present study $\alpha > .78$.

A third scale related to the BIS is Perceived Vulnerability to Disease (PVD; Duncan et al., 2009). This measure has 15 questions on a Likert scale from 1 to 7, 1 being *strongly disagree* and 7 being *strongly agree*. It consists of two subscales: beliefs of one's own susceptibility to infectious diseases (Perceived Infectability), and discomfort in hypothetical contexts that confer high risk for pathogen transmission (Germ Aversion). A sample question from the former subscale is "*If an illness is 'going around', I will get it;*" from the latter, "*I prefer to wash my hands pretty soon after shaking someone's hand.*" Cronbach's alphas of the subscales are .87 for Perceived Vulnerability and .74 for Germ Aversion (Duncan et al., 2009). Cronbach's alphas for the present study are .93 and .79 for Perceived Vulnerability and Germ Aversion subscales respectively.

Anxiety about the coronavirus was measured using Coronavirus Anxiety Scale (CAS; Lee, 2020). The measure has five items. Participants are asked to indicate how often they have experienced the scale item activities over the last 2 weeks using *Not at all* (0), *Rare, less than a day or two* (1), *Several days* (2), *More than 7 days* (3), and *Nearly every day over the last 2 weeks* (4). An example of an item from the scale is "*I felt nauseous or had stomach problems when I thought about or was exposed to information about the coronavirus.*" Cronbach's alpha for the scale has been measured at $\alpha = .93$ (Lee, 2020); for the present study $\alpha = .85$.

Opinions on how the government has responded to the pandemic was measured using the presently developed Government Perception Scale. The measure includes 10 items. Participants are asked to answer how much they agree with each item on a 7-point Likert scale (1 being *strongly disagree* and 7 being *strongly agree*). One item from the scale is "*overall, the U.S. has done a great job responding to the coronavirus pandemic."* From the present study, Cronbach's alphas for the scale and a revised version are .89 and .94, respectively.

Knowledge about the coronavirus pandemic and individual's intent to get the COVID-19 vaccine once one is developed was measured with the presently developed Knowledge of COVID-19 and Vaccination Intent Scale. The measure has five items. Participants answer questions about the coronavirus on a scale of 1 to 7, 1 being *strongly agree* and 7 being *strongly disagree*. A sample of an item is "*the coronavirus is more contagious than the flu.*" The reliability of this scale has been measured in the present study at $\alpha = .83$.

RWA was measured with Very Short Authoritarianism Scale (Bizumic & Duckitt, 2018). The scale consists of 6 questions measuring conservatism, authoritarian submission, traditionalism, conventionalism, authoritarianism, and authoritarian aggression. Participants

respond to the items on a scale of 1 to 7, 1 being *strongly disagree* and 7 being *strongly agree*. One item is "*It's great that many young people today are prepared to defy authority*" (Conservatism or Authoritarian Submission, reverse scored). Alpha coefficient for this scale consistently tests above .70 (Bizumic & Duckitt, 2018). In the present study α = .82.

LWA was measured with the LWA Scale (Costello et al., 2020). The measure includes 39 items. Participants answer each item on a 1–7 scale, where 1 = *I Strongly disagree*, 4 = *neutral/undecided*, and 7 = *I Strongly agree*. The scale consists of three subscales: Anti-hierarchical Aggression, Conventionalism, and Top-down Censorship. An example of an Anti-hierarchical Aggression item is "*The rich should be stripped of their belongings and status.*" An example of a Conventionalism item is "*Anyone who opposes gay marriage must be homophobic.*" Lastly, an example of an item from the Top-down Censorship subscale is "*University authorities are right to ban hateful speech from campus.*" The subscales have been measured as reliable (Antihierarchical Aggression, *H* = .91; Conventionalism, *H* = .88; Top-down Censorship, *H* = .91). In the present study α = .96.

Vaccination attitudes were measured with the VAX scale (Martin & Petrie, 2017). The measure includes 11 items. Participants indicate their agreement on each item on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). An example of an item is "*Natural immunity lasts longer than a vaccination.*" Cronbach's alpha for the scale has been shown to be .78 or higher (Martin & Petrie, 2017). In the present study α = .93

Opinions on the Trump administration's pandemic response were obtained presently developed Opinion of Trump Administration's Pandemic Response scale. Participants are asked how much they agree with four statements on a scale from 1 to 7, 1 being *strongly disagree* and

7 being *strongly agree*. Example items include "*I am satisfied with how the Trump administration has responded to the pandemic*" and "*President Trump has taken appropriate actions to keep Americans safe.*" In the present study α = .94.

Opinions on public health officials were measured through the Public Health Official Opinion Scale. Participants are asked how much they agree with four statements on a scale from 1 to 7, 1 being *strongly disagree* and 7 being *strongly agree*. Example items include "*The Center for Disease Control (CDC) is doing a good job managing the pandemic,*" and "*I am satisfied with how U.S. public health officials are handling the pandemic.*" In the present study reliability has been measured at α = .82.

Participants' news consumption habits are measured with the presently developed News Consumption Scale. Participants are asked five questions on their news habits, split into two subscales (News Interest and Trusted Sources). Questions include "*How often do you check the news on a scale of 1-7?*" and "*How Interested are you in the news on a scale of 1-7?*" In the present study reliability for News Interest has been measured at α = .92.

Attitudes toward Trump are measured through the presently developed Attitudes Toward Donald Trump Scale. Participants answer three questions on how supportive they are of Donald Trump on a scale of 1 (*not at all*) to 7 (*very much*). Sample items include "*How supportive are you of Donald Trump?*" and "*How likely are you to vote for Donald Trump?*" In the present study reliability has been measured at α = .98.

Attitudes toward Joseph Biden are measured through the presently developed Attitudes Toward Joe Biden Scale. Participants answer three questions on how supportive they are of Joe Biden on a scale of 1 (*not at all*) to 7 (*very much*). Sample items include "*How supportive are*

you of Joe Biden?" and "*How likely are you to vote for Joe Biden?*" In the present study reliability has been measured at $\alpha = .92$.

For means, standard deviations, and Cronbach's alphas of the constructs measured, see Table 2. Demographic information collected includes age, region of the US they are located in, highest degree of education completed, political party affiliation, age, ethnicity (Hispanic/Latino or not Hispanic/Latino), race (White, Black or African American, American Indian or Alaskan Native, Asian, Native Hawaiian or Other Pacific Islander), gender (male, female, or other), religious affiliation (Christian - Protestant, Christian - Catholic, Hindu, Buddhist, not religious, Muslim, Jewish, Atheist, Agnostic, or other), political orientation (very liberal to very conservative on a 7-point scale), and personal experience with the coronavirus.

Table 2

Means, Standard Deviations, and Cronbach's Alphas.

	M	*SD*	*a*
DS	2.39	0.43	.89
TDDS-Moral	5.10	1.50	.93
TDDS-Sexual	3.96	1.33	.80
TDDS-Pathogen	4.67	1.05	.78
PVD			
Germ Aversion	4.14	1.13	.79
Perceived Infectability	3.56	1.40	.93
CAS	1.41	0.63	.85
GPS-All items	2.72	1.29	.89
GPS-Revised	2.34	1.53	.94
COVID_Knowledge	5.44	1.51	.83
RWA	2.90	1.44	.82
LWA	3.59	1.17	.96
Antivax	2.86	1.29	.93
Trump Administration Approval	2.46	2.04	.94
CDC Approval	4.13	1.37	.82
News Interest	4.99	1.86	.92
Trump Support	2.20	2.11	.98
Biden Support	4.30	2.02	.92

Note. DS = Disgust Scale, TDDS = Three Domain Disgust Scale, PVD = Perceived Vulnerability to Disease, RWA = Right-Wing Authoritarianism, LWA = Left-Wing Authoritarianism, Antivax = VAX Scale, CAS = Coronavirus Anxiety Scale, GPS = Government Perception Scale, Covid_Knowledge = knowledge of the pandemic.

CHAPTER IV

RESULTS

SPSS is a program specifically designed for quantitative data analysis with social science data. All data analyses are run through SPSS.

Normality testing

Variables were examined for normality. Some of the variables were not normally distributed. Coronavirus anxiety (CAS), approval of the government's response to the pandemic (GPS), approval of the Trump administrations' pandemic response, Trump support, and TDDS-Moral had either skewness or kurtosis values outside of the -1 to 1 range.

Correlations

An average score was made of each measure consisting of multiple questions. Then a zero-order correlation table was constructed with bivariate correlations between disgust sensitivity (DS), PVD, CAS, GPS, knowledge of COVID-19, RWA, LWA, vaccination opinions, and political ideology. Pearson's *r* was used to run all bivariate correlations. The hypotheses anticipated that disgust sensitivity would be negatively correlated with LWA (H1). TDDS-Moral and TDDS-Sexual were significantly correlated with LWA, respectively ($r = -.27$, $p < .01$; $r = -.26$, $p < .01$), but TDDS-Pathogen and DS were not significantly correlated with LWA, respectively ($r = .06$, $p = .52$; $r = .09$, $p = .38$). DS and TDDS were hypothesized to be positively correlated with RWA (H2). RWA was moderately correlated with DS ($r = .17$, $p = .05$), significantly correlated with TDDS-Moral and TDDS-Sexual, respectively ($r = .39$, $p < .01$; $r =$

.42, $p < .01$), and not significantly correlated with TDDS-Pathogen ($r = .07$, $p = .39$). Disgust measures were also hypothesized to be positively correlated with anti-vaccination attitudes (H3). The correlation between antivaccination attitudes and DS did not approach significance ($r = .14$, $p = .13$), nor did the correlation between antivaccination attitudes and TDDS-Moral ($r = .11$, $p = .21$), but the correlations were statistically significant between antivaccination attitudes and TDDS-Pathogen and TDDS-Sexual, respectively ($r = .19$, $p < .05$; $r = .21$, $p < .05$).

LWA was hypothesized to be positively correlated with anxiety about COVID-19, while RWA was hypothesized to be negatively correlated with anxiety about COVID-19 (H4). LWA was found to be positively correlated with CAS ($r = .24$, $p < .01$), and RWA was negatively correlated with CAS ($r = -.19$, $p < .05$). Removing the males from the sample makes the correlation between LWA and CAS non-significant ($r = .175$, $p = .08$). Knowledge about the COVID-19 pandemic was hypothesized to be positively correlated with LWA, while being negatively correlated with RWA (H5). LWA was positively correlated with knowledge about COVID-19 ($r = .42$, $p < .01$); RWA was negatively correlated with knowledge about COVID-19 ($r = -.44$, $p < .01$). GPS was hypothesized to be negatively correlated with LWA and positively correlated with RWA (H6). LWA was negatively correlated with GPS ($r = -.65$, $p < .01$), and RWA was positively correlated with GPS ($r = .74$, $p < .01$). Additionally, LWA and RWA were significantly correlated with the revised GPS scale, respectively ($r = .75$, $p < .01$; $r = -.68$, $p < .01$), demonstrating a stronger relationship with the revised scale. See Table 3 for a complete correlation table.

Table 3

Zero-Order Correlations for all Measures

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1.	DS																						
2.	TDDS_Moral	.19*																					
3.	TDDS_Sexual	.48**	.28**																				
4.	TDDS_Pathogen	.61**	0.12	.41**																			
5.	PVD_GA	.52**	.20*	0.12	.39**																		
6.	PVD_PI	.19*	-0.10	0.14	0.10	.25**																	
7.	RWA	0.17	.39**	.42**	0.07	0.00	-.23**																
8.	LWA	0.09	-.27**	-.26**	0.06	.18*	.23**	-.67**															
9.	Antivax	0.14	0.11	.21*	.19*	-0.04	-.21*	.46**	-.36**														
10.	CAS	.20*	0.01	0.06	0.01	.33**	.25**	-.19*	.25**	-.18*													
11.	GPS	-0.01	.29**	.29**	-0.07	-.21*	-.33**	.74**	-.65**	.41**	-.20*												
12.	Covid_Knowledge	-0.01	-.19*	-0.10	-0.03	0.14	.19*	-.44**	.42**	-.48**	0.15	-.55**											
13.	Trump_Admin_Approval	0.03	.30**	.28**	-0.01	-0.15	-.43**	.72**	-.62**	.51**	-.21*	.85**	-.63**										
14.	CDC_Approval	-0.02	0.13	0.07	0.00	0.03	0.01	0.08	-0.14	-.33**	-0.11	0.12	.29**	-0.07									
15.	Trump_Support	0.02	.36**	.29**	-0.06	-0.16	-.36**	.76**	-.67**	.52**	-.19*	.84**	-.65**	.91**	-0.09								
16.	Biden_Support	0.03	-.26**	-.21*	0.05	0.13	0.15	-.49**	.45**	-.40**	0.11	-.61**	.58**	-.65**	0.13	-.72**							
17.	Fox	0.13	.20*	.23*	0.06	-0.03	-0.17	.52**	-.39**	.47**	-0.02	.59**	-.52**	.58**	-0.06	.61**	-.51**						
18.	New York Times	0.03	-0.15	-0.14	0.13	0.03	.20*	-.48**	.47**	-.32**	.18*	-.54**	.44**	-.58**	.24**	-.66**	.70**	-.38**					
19.	Trump administration	0.08	.35**	.30**	0.01	-0.13	-.32**	.74**	-.61**	.47**	-0.15	.82**	-.62**	.87**	-0.08	.92**	-.67**	.65**	-.60**				
20.	U.S. Public health officials	0.08	0.08	0.06	0.06	0.02	0.12	-0.04	0.10	-.49**	0.03	-0.11	.34**	-.25**	.64**	-.28**	.38**	-0.16	.47**	-.20*			
21.	News_Interest	-0.04	-0.04	-0.09	-0.03	0.02	0.06	-0.17	0.13	-0.17	.31**	-0.16	0.14	-0.16	0.11	-.22*	.28**	-0.12	.39**	-0.15	.23*		
22.	Republican	0.04	.34**	.30**	-0.06	-0.05	-.27**	.61**	-.50**	.47**	-0.10	.67**	-.53**	.76**	-0.15	.79**	-.60**	.54**	-.55**	.75**	-.26**	-0.08	

*Note. N = 138. * p < .05; ** p < .01.* DS = Disgust Scale, TDDS = Three Domain Disgust Scale, PVD = Perceived Vulnerability to Disease, RWA = Right-Wing Authoritarianism, LWA = Left-Wing Authoritarianism, Antivax = VAX Scale, CAS = Coronavirus Anxiety Scale, GPS = Government Perception Scale, Covid_Knowledge = knowledge of the pandemic, variables 17-20 indicate trust in the sources listed.

Exploratory Correlations

Pearson's correlations (see Table 3) were run on disgust sensitivity (DS and TDDS-Moral, TDDS-Sexual, and TDDS-Pathogen), perceived vulnerability to disease (PVD-GA and PVD-PI), LWA, RWA, anti-vaccination attitudes (Antivax), CAS, opinion of U.S's response to the pandemic (GPS), knowledge of the pandemic (Covid_Knowledge), Trump administration approval (Trump_Admin_Approval), CDC and public health officials approval (CDC_Approval), personal experience of the pandemic (Covid_Experience), Trump support, Biden support, trust in various sources of information (Fox News, *The New York Times*, The Trump administration, and U.S public health officials), interest in news (News_Interest), and Republican Party identification (Republican).

Political Attitudes

Republican identity was significantly positively correlated with sensitivity to disgust (TDDS-Moral and TDDS-Sexual), RWA, antivaccination attitudes, favorable opinions of the GPS, approval of the Trump administrations response to the pandemic, Trump support, trust in Fox news, and trust in the Trump administration. Republican identity was significantly negatively correlated with LWA, knowledge of COVID-19, Biden support, trust in *The New York Times*, and interest in the news.

Coronavirus attitudes

COVID-19 anxiety was significantly positively correlated with DS (but not any of the subscales of TDDS), PVD, LWA, and news interest. COVID-19 anxiety was significantly

negatively correlated with RWA, antivaccination attitudes, GPS, approval of the Trump administration's response, and Trump support.

News interest

Interest in the news was significantly positively correlated with Biden support (r = .28), CAS (r = .31), and trust in *The New York Times* (r = .39). The only significant negative correlation with news interest was Trump support (r = -.22).

Antivaccination attitudes

Political attitudes were correlated with antivaccination attitudes, consistent with the correlation between political orientation and coronavirus attitudes. RWA was significantly correlated with Antivax (r = .44, p < .01). LWA was significantly negatively correlated with Antivax (r = -.36, p < .01). RWA was significantly correlated with approval of the government's response to the pandemic (r = .74, p < .01). LWA was significantly negatively correlated with GPS (r = -.65, p < .01). Additionally, Antivax was significantly positively correlated with GPS (r = .41, p < .01), Trump support (r = .52, p < .01), Republican identification (r = .47, p < .01), and negatively correlated with knowledge of the pandemic (r = -.48, p < .01), Biden support (r = -.40 p < .01), and approval of the CDC and public health officials (r = -.33, p < .01).

Personal experience with the pandemic

Pearson's correlations (see Table 4) were run on personal experience with the pandemic, disgust sensitivity, personal vulnerability to disease, political attitudes, CAS, and knowledge of the pandemic. Whether participants had personally contracted COVID-19 was significantly negatively correlated with knowledge of the pandemic (r = -.30). Whether the pandemic had

negative impact on finances was significantly positively correlated with LWA, and significantly negatively correlated with GPS, RWA, approval of the Trump administration, approval of the CDC and public health officials, and Trump support.

Table 4

Correlations between Personal Pandemic Experience and Salient Variables

	Have you contracted COVID-19?	Do you know someone who has contracted COVID-19?	Has the pandemic negatively affected your finances?	Have you lost your job or had your hours reduced?
DS	-0.15	-0.12	-0.06	-0.03
TDDS_Moral	0.04	-0.14	-0.13	0.02
TDDS_Sexual	-0.11	-0.14	-0.16	-0.12
TDDS_Pathogen	-0.10	0.01	0.00	0.08
PVD_GA	-0.07	-0.06	0.03	0.13
PVD_PI	0.08	-0.06	0.07	0.09
CAS	-0.04	0.12	0.11	0.11
GPS	0.11	-0.10	-.24**	-.20*
Covid_Knowledge	-.30**	0.11	0.00	0.02
RWA	-0.01	-0.04	-.24**	-.20*
LWA	-0.08	0.14	.30**	.33**
Trump_Admin_Approval	0.11	-0.06	-.20*	-0.14
CDC_Approval	-0.17	-0.10	-.23**	-0.03
Trump_Support	0.09	-0.14	-.23*	-0.15
Biden_Support	-0.12	0.16	0.06	0.09

*Note. * $p < .05$; ** $p < .01$.*

Multiple Regression

A stepwise multiple regression was run to examine whether disgust sensitivity and political orientation (measured by multiplying the inverse of RWA with LWA) predict CAS. Variables were standardized using Zscores. An average disgust sensitivity variable (Disgust) was made by taking the mean of DS and TDDS-Pathogen. In the first step, disgust sensitivity and

political orientation were input as predictors. In the second step, an interaction term was entered. The main effect of disgust sensitivity ($\beta = .13$, $t(134) = 1.50$, $p = .14$) was not significant, so disgust sensitivity did not reliable predict CAS. There was a significant main effect for political orientation ($\beta = .24$, $t(134) = 2.91$, $p < .01$), demonstrating political orientation (higher numbers indicates further left-wing orientation) predicts anxiety about the coronavirus pandemic. Disgust sensitivity and political orientation explained 7.2% of the variance in CAS ($R^2 = .072$, $F(2,134) = 5.23$, $p < .01$). In Step 2, an interaction term was entered, but the interaction effect was not significant ($\beta = .05$, $t(133) = 0.53$, $p = .60$). Model 2 explained 7.4% of the variance in CAS ($R^2 = .074$, change in $R^2 = .002$, $F(3, 133) = 3.56$, $p < .05$). There was a noticeable floor effect for the CAS measure, with most participants indicating few symptoms of anxiety about the pandemic. So, the variable was recoded into a separate binary variable (0 indicates low or no symptomology and 1 indicates at least some symptoms of anxiety). The resultant variable put 73 participants in the 0 group and 64 participants into the 1 group. Recoding CAS into a binary variable and rerunning the regression as a binary logistic regression does not change the significance of the findings, the effects disgust sensitivity and the interaction variable had on CAS were still non-significant while political orientation was significant.

A second stepwise multiple regression was run to test H8, whether disgust sensitivity (average of DS and TDDS-Pathogen) and political orientation (inverse of RWA averaged with LWA) differentially predict knowledge about the COVID-19 pandemic; such that, for those more left leaning, disgust sensitivity would predict more knowledge, and for those more right leaning, disgust sensitivity would predict less knowledge. All three variables were standardized with Zscores. An interaction variable was created by multiplying disgust sensitivity and political

orientation. Political orientation and disgust sensitivity were input into the regression model as predictors in Step 1, and in Step 2 the interaction variable was entered. The main effect of political orientation was significant (β = .46, t(134) = 6.05, p < .01). From this result, political orientation reasonably predicts knowledge about COVID-19, such that the more left-leaning participants were politically, the more knowledgeable they were about COVID-19. The main effect of disgust sensitivity was not significant (β = -.01. t(134) = -.15, p = .88). The variance in knowledge about COVID-19 explained by disgust sensitivity and political orientation was 21.5% (R^2 = .22, F(2,134) = 18.35, p < .01). The interaction was not statistically significant (β = -.03, t(134) = -.43 p = .67). The second model explained 21.6% of the variance in knowledge about COVID-19 (R^2 = .22, change in R^2 = .00, F(3, 133) = 12.22, p < .01).

A third multiple regression was run to test H9, whether disgust sensitivity (average of DS and TTDS-Pathogen) differentially predicts GPS based on political orientation (inverse of RWA averaged with LWA); such that, for those more left-leaning politically, disgust sensitivity would predict lower GPS, and for those more right-leaning politically, disgust sensitivity would higher GPS. The variables were standardized using Zscores. An interaction term was created by multiplying disgust sensitivity with political orientation. There was a significant main effect for political orientation (β = -.77, t(134), p < .01), but not disgust sensitivity (β = -.07, t(134) = -1.25, p = .21). GPS could be predicted by political orientation, the more left-leaning participants were politically, the less they approved of the government's response. Disgust sensitivity and political orientation explained 58.8% (R^2 = .58, F(2,134) = 95.52, p < .01) of the variance in GPS. Furthermore, the interaction effect was not statistically significant (β = .07, t(134) = 1.19, p = .24). The variance in GPS explained by the second model was 59.2% (R^2 = .59, change in R^2 =

.00, $F(3,133) = 64.34$, $p < .01$). Rerunning this analysis with a revised GPS scale did not affect the significance or directionality of the results but it did increase the variance explained by both models to about 61%.

CHAPTER V

DISCUSSION

The aim of the present research was to better understand the relationship of how the BIS, as measured by disgust sensitivity, interacts with anxiety and knowledge of COVID-19 and political opinions during the pandemic. The relationships between disgust sensitivity, LWA, RWA, antivaccination attitudes, CAS, knowledge about COVID-19, and GPS were measured. Results were mixed for what the hypotheses had predicted. For the first hypothesis, two forms of disgust sensitivity correlated with LWA: TDDS-Moral and TDDS-Sexual. Although, LWA was not significantly correlated with DS or TDDS-pathogen. This could be due to the nature of the construct, as LWA may be more aptly understood as not the opposite of RWA, but as the left-wing counterpart.

DS was positively correlated with RWA with moderate significance. RWA was correlated with moral and sexual disgust, but not pathogen. In past research, disgust sensitivity has been connected to social conservatism (Shook et al., 2017), and sexual disgust sensitivity has been connected to RWA (Patev et al. 2019). Furthermore, pathogen disgust sensitivity has been connected to RWA (Shook, Oosterhoof et al., 2017), but that connection was not present in this sample. The present study may have not replicated this effect because of the range restriction caused by a limited sampling of conservative participants.

As anticipated, disgust sensitivity positively correlated with antivaccination attitudes. But only TDDS-Sexual and TDDS-Pathogen reached statistical significance. This is fairly consistent

with prior research that has connected disgust sensitivity with more negative attitudes towards vaccines (Clay, 2017; Hornsey et al., 2018; Luz et al., 2019;).

Political orientation was correlated with CAS. For those more right-leaning politically, as measured by RWA, there was a negative correlation with symptoms of anxiety. For those more left leaning politically, as measured by LWA, there was a positive correlation with anxiety symptoms. Political orientation was also significantly correlated with knowledge of the pandemic and GPS. LWA was positively correlated with knowledge and negatively correlated with GPS. In contrast, RWA was negatively correlated with knowledge of the pandemic and positively correlated with GPS.

None of the hypothesized interactions between disgust sensitivity and political orientation significantly predicted knowledge about COVID-19, CAS, or GPS. This could be because there is no moderating effect of disgust sensitivity on predicting these variables, or if there is an effect, it was not large enough to be detected in the sample. Only 15 participants identified as Republican so future research could verify if there in fact was no effect or if the effect was simply too small to detect. Furthermore, the politicization could be causing a rift where one would expect to see the connection between BIS measures and attitudes towards COVID-19 for conservatives. For that group, the downplaying of the severity of the pandemic may be attenuating the connection one would expect between disgust sensitivity and pandemic anxiety, knowledge, etc. Another reason the effect may not be detectable in the present sample is that the population of the present sample is likely not at high-risk to the disease. The median age was 30, so that may be a contributing factor. Also, the symptoms of COVID-19 may not be severe

enough to activate the BIS. A more visibly contagious disease might activate the BIS to a level necessary to be detected using the current methods.

Additional notable exploratory findings provided further insight into how BIS interacts with attitudes towards politics and disease avoidance. There were clustered correlations along fairly partisan lines in the results. Attitudes towards the pandemic were especially connected with political orientation and trust in certain news sources. RWA and Republican identification were significantly negatively correlated with knowledge of the pandemic. RWA was also significantly negatively correlated with COVID-19 anxiety. RWA and Republican identity were significantly positively correlated with trust in Fox News and the Trump administration. Republican identification was also significantly negatively correlated with perceived infectibility and trust in *The New York Times*. In contrast, LWA was significantly positively correlated with knowledge and anxiety of the pandemic and trust in *The New York Times*. LWA was significantly negatively correlated with antivaccination attitudes, GPS, approval of the Trump administration, and trust in the Trump administration and Fox News.

Limitations

Limitations of the study involve the restricted sample composition. Fifteen Republicans were sampled, out of a total of 137 respondents (11%). With only 11% of respondents identifying as Republican, this produces a fairly substantial range restriction for the hypothesized interactions. None of the hypothesized interactions were statistically significant, and it could have been due to the limited number of Republicans sampled. It could also be due to there not being an interactive effect, but the difference would not be discernable in the present sample.

Eighteen out of 137 respondents identified as male, which makes the sample about 13% male. The unbalanced gender composition of the study could affect the results as past research has shown that women typically report higher sensitivity to disgust than men (Druschel & Sherman, 1999). The results of the present study may be impacted by the heavily female sample. Because women tend to report higher disgust sensitivity than men, the results may be exaggerated if compared to a more gender balanced sample. Of the 15 participants that identified as Republican, two of them were male. This is almost the same proportion of males to non-males in the sample. Thirteen percent of the total sample were male and 13.3% of Republicans were male. The study was conducted online so there were limitations associated with that format. Because it was online, there was not an easy way to identify if the participants were American, nor could individuals without internet access complete the study. Furthermore, response fatigue could have influenced the data as there were 178 questions. Lastly, potential participants who are more skeptical of the pandemic and of research in general are less likely to fill out questionnaires about the pandemic, so they would be underrepresented in the present sample.

Future directions

There may have been recruitment issues associated with the format of the flyer. In the title of the flyer, it specifically states, “How does the pandemic affect you?” One comment on a post of the flyer on the social media website Gab, known for its right-wing user base, was: “Wouldn't you first have to believe the BS??” Another comment on the same site read: “You will be crediting my PayPal account for the time?” Given how the pandemic has been politicized, these reactions may demonstrate the reason why sampling this population may be difficult when researchers advertise their studies in ways that may not be compatible to their participants’

worldview. Future research into this line of inquiry could accommodate for this when collecting data.

Conclusion

Because of the politicization of the pandemic and the apparent tribalism associated with political messaging, people have responded to the pandemic in fairly partisan ways. Those who identified more left-wing politically, as measured by LWA, were more anxious about COVID-19, knew more about COVID-19, and were less sensitive to disgust. In contrast, those who identified more right-wing politically, as measured by RWA, were less anxious about COVID-19, knew less about COVID-19, and were more sensitive to disgust. It seems that the BIS is having an ironic interaction with the COVID-19 pandemic. Those who are more sensitive to disgust, a trait that would ordinarily make one less susceptible to disease, as it encourages a higher rejection rate of potentially infectious stimuli, are less concerned and less knowledgeable about COVID-19. The theorized reason for this ironic reaction is the tribalism that the evolutionarily adapted mechanism of disease avoidance encourages combined with the politicization and downplaying of the severity of the pandemic by politicians and media figures. The BIS could be encouraging partisanship, so those who are more sensitive to disgust would be more inclined to favor and trust their in-groups. And since disgust sensitivity is correlated with socially conservative values and Republican identification, those who are more disgust sensitive would be more likely to listen to and trust right-wing sources that have been downplaying the severity of the pandemic. This would explain the ironic data in the present study.

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APPENDIX A

Measures

Disgust (Haidt, McCauley, & Rozin, 1994)

Responses for items 1 through 16 can range from 1 to 4, 1 being *strongly disagree* and 4 being *strongly agree*. Responses for items 17-32 can range from 1 to 4, 1 being *not disgusting at all* and 4 being *very disgusting*.

1. I might be willing to try eating monkey meat, under some circumstances.

2. I try to avoid letting any part of my body touch the toilet seat in a public restroom, even when it appears clean.

3. It would bother me to be in a science class, and to see a human hand preserved in a jar.

4. It would make me uncomfortable to hear a couple making love in the next room of a hotel.

5. If I see someone vomit, it makes me sick to my stomach.

6. I have no problem buying and wearing shirts from used clothing stores.

7. It would bother me tremendously to touch a dead body.

8. It would bother me to see photos of two people having oral sex.

9. Seeing a cockroach in someone else's house does <u>not</u> bother me.

10. I probably would not go to my favorite restaurant if I found out that the cook had a cold.

11. It would bother me to sleep in a nice hotel room if I knew that a man had died of a heart attack in that room the night before.

12. It is OK with me if people want to look at pornography involving animals.

13. Even if I was hungry, I would not drink a bowl of my favorite soup if it had been stirred by a used but thoroughly washed fly-swatter.

14. I would not hold a dollar bill between my lips (like if I needed a free hand), because so many strangers have touched it with their dirty hands.

15. If I were properly trained, I would be willing to help draw blood in a blood drive.

16. I think that people who masturbate every day are degrading themselves.

17. You see maggots on a piece of meat in an outdoor garbage pail.

18. You take a sip of soda and then realize that you picked up the wrong can, which a stranger had been drinking out of.

19. You see someone accidentally stick a fishing hook through his finger.

20. You hear about a 30 year old man who seeks sexual relationships with 80 year old women.

21. While you are walking through a tunnel under a railroad track, you smell urine.

22. You sit down on a public bus, and feel that the seat is still warm from the last person who sat there.

23. You see a man with his intestines exposed after an accident.

24. As part of a sex education class, you are required to inflate a new unlubricated condom, using your mouth.

25. A friend offers you a piece of chocolate shaped like dog-doo.

26. You find out that someone you despise used to live in your house, and sleep in your bedroom.

27. Your friend's pet cat dies, and you have to pick up the dead body with your bare hands.

28. You hear about an adult brother and sister who like to have sex with each other.

29. You see a bowel movement left unflushed in a public toilet.

30. While traveling for 2 weeks with a friend, you discover that your underwear got mixed up in the wash, and you are wearing your friend's underwear.

31. You accidentally touch the ashes of a person who has been cremated.

32. While walking through a park, you see two dogs mating (having sex)

Three Domain Disgust Scale (Tybur et al., 2009)

The following items describe a variety of concepts. Please rate how *disgusting* you find the concepts described in the items, where 0 means that you do not find the concept disgusting at all, and 6 means that you find the concept extremely disgusting.

1. Shoplifting a candy bar from a convenience store
2. Hearing two strangers having sex
3. Stepping on dog poop
4. Stealing from a neighbor
5. Performing oral sex
6. Sitting next to someone who has red sores on their arm
7. A student cheating to get good grades
8. Watching a pornographic video

9. Shaking hands with a stranger who has sweaty palms
10. Deceiving a friend
11. Finding out that someone you don't like has sexual fantasies about you
12. Seeing some mold on old leftovers in your refrigerator
13. Forging someone's signature on a legal document
14. Bringing someone you just met back to your room to have sex
15. Standing close to a person who has body odor
16. Cutting to the front of a line to purchase the last few tickets to a show
17. A stranger of the opposite sex intentionally rubbing your thigh in an elevator
18. Seeing a cockroach run across the floor
19. Intentionally lying during a business transaction
20. Having anal sex with someone of the opposite sex
21. Accidentally touching a person's bloody cut

Perceived Vulnerability to Disease (Duncan et al., 2009)

Respond to the following items on a scale of 1 to 7, 1 being strongly disagree and 7 being strongly agree.

1. In general, I am very susceptible to colds, flu and other infectious diseases.
2. I am unlikely to catch a cold, flu or other illness, even if it is 'going around'. (reverse-scored)
3. If an illness is 'going around', I will get it.
4. My immune system protects me from most illnesses that other people get. (reverse-scored)
5. I am more likely than the people around me to catch an infectious disease.
6. My past experiences make me believe I am not likely to get sick even when my friends are sick. (reverse-scored)
7. I have a history of susceptibility to infectious disease.
8. I prefer to wash my hands pretty soon after shaking someone's hand.
9. I avoid using public telephones because of the risk that I may catch something from the previous user.
10. I do not like to write with a pencil someone else has obviously chewed on.

11. I dislike wearing used clothes because you do not know what the last person who wore it was like.

12. I am comfortable sharing a water bottle with a friend. (reverse-scored)

13. It really bothers me when people sneeze without covering their mouths.

14. It does not make me anxious to be around sick people. (reverse-scored)

15. My hands do not feel dirty after touching money. (reverse-scored)

Coronavirus Anxiety Scale (CAS) (Sherman A. Lee, 2020)

How often have you experienced the following activities over the last 2 weeks? Not at all (0) Rare, less than a day or two (1) Several days (2) More than 7 days (3) Nearly every day over the last 2 weeks (4)

1. I felt dizzy, lightheaded, or faint, when I read or listened to news about the coronavirus. 0 1 2 3 4

2. I had trouble falling or staying asleep because I was thinking about the coronavirus. 0 1 2 3 4

3. I felt paralyzed or frozen when I thought about or was exposed to information about the coronavirus. 0 1 2 3 4

4. I lost interest in eating when I thought about or was exposed to information about the coronavirus. 0 1 2 3 4

5. I felt nauseous or had stomach problems when I thought about or was exposed to information about the coronavirus. 0 1 2 3 4

Column Totals _____ + _____ + _____ + _____ + _____
Total Score _____

Government Perception Scale (Terrizzi & Kempthorne, 2020)

Please respond to the following statements about the U.S. government's response to the coronavirus pandemic on a scale of 1 to 7, 1 being strongly disagree and 7 being strongly agree.

1. Overall, the U.S. has done a great job responding to the coronavirus pandemic.
2. The U.S. government has done a good job managing the economy during the pandemic.
3. The U.S. has responded to the pandemic better than most countries.
4. The U.S. Government is reopening the economy too early.
5. The U.S. government has the pandemic under control.
6. The U.S. government did the correct thing by recommending stay at home orders.
7. The U.S. government's response has saved lives.
8. The U.S. government's response has limited the spread of coronavirus.
9. Our elected officials are doing a good job responding to the pandemic.

Government Perception Scale - Revised (Terrizzi & Kempthorne, 2020)

Please respond to the following statements about the U.S. government's response to the coronavirus pandemic on a scale of 1 to 7, 1 being strongly disagree and 7 being strongly agree.

1. Overall, the U.S. has done a great job responding to the coronavirus pandemic.
2. The U.S. government has done a good job managing the economy during the pandemic.
3. The U.S. has responded to the pandemic better than most countries.
4. The U.S. government has the pandemic under control.
5. The U.S. government did the correct thing by recommending stay at home orders.
6. The U.S. government's response has saved lives.
7. The U.S. government's response has limited the spread of coronavirus.
8. Our elected officials are doing a good job responding to the pandemic.

Knowledge of COVID-19 and vaccination intent Scale (Terrizzi, 2020)

Answer the following questions about the coronavirus on a scale of 1 to 7, 1 being strongly agree and 7 being strongly disagree.

1. The coronavirus is more contagious than the flu.

2. The coronavirus has a higher mortality rate than the flu.

3. The U.S. has had the most cases of coronavirus.

4. The U.S. has had the most deaths due to coronavirus.

5. When a vaccine for coronavirus is developed, I will get vaccinated.

Very Short Authoritarianism Scale (Bizumic & Duckitt, 2018)

Please answer the following questions on a scale of 1 to 7, 1 being strongly disagree and 7 being strongly agree.

1. It's great that many young people today are prepared to defy authority. (Conservatism or Authoritarian Submission) (R)
2. What our country needs most is discipline, with everyone following our leaders in unity (Conservatism or Authoritarian

Submission)

3. God's laws about abortion, pornography, and marriage must be strictly followed before it is too late. (Traditionalism or

Conventionalism)

4. There is nothing wrong with premarital sexual intercourse. (Traditionalism or Conventionalism) (R)
5. Our society does NOT need tougher government and stricter laws. (Authoritarianism or Authoritarian Aggression) (R)
6. The facts on crime and the recent public disorders show we have to crack down harder on troublemakers, if we are going preserve law and order. (Authoritarianism or Authoritarian Aggression)

Note. R indicates the item is reverse scored.

Left-Wing Authoritarianism (LWA) Scale (Costello et al., 2020)

For the following questions, please answer on a 1–7 scale, where 1 = "I Strongly disagree,"

4 = "neutral/undecided," and 7 = "I Strongly agree."

1. The rich should be stripped of their belongings and status.
2. Rich people should be forced to give up virtually all of their wealth.
3. If I could remake society, I would put people who currently have the most privilege at the very bottom.
4. America would be much better off if all of the rich people were at the bottom of the social ladder.
5. When the tables are turned on the oppressors at the top of society, I will enjoy watching them suffer the violence that they have inflicted on so many others.
6. Most rich Wall Street executives deserve to be thrown in prison.
7. Constitutions and laws are just another way for the powerful to destroy our dignity and individuality.
8. The current system is beyond repair.
9. We need to replace the established order by any means necessary.
10. Political violence can be constructive when it serves the cause of social justice.
11. Certain elements in our society must be made to pay for the violence of their ancestors.
12. If a few of the worst Republican politicians were assassinated, it wouldn't be the end of the world.
13. I would prefer a far-left leader with absolute authority over a right-wing leader with limited power.
14. Schools should be required by law to teach children about our country's history of racism, classism, sexism, and homophobia.
15. Anyone who opposes gay marriage must be homophobic.
16. Deep down, just about all conservatives are racist, sexist, and homophobic.
17. People are truly worried about terrorism should shift their focus to the nutjobs on the far-right.
18. The "old-fashioned ways" and "old-fashioned values" need to be abolished.
19. Radical and progressive moral values can save our society.
20. All political conservatives are fools.
21. I cannot imagine myself becoming friends with a political conservative.
22. Conservatives are morally inferior to liberals.
23. It is important that we destroy the West's nationalist, imperialist values.
24. I try to expose myself to conservative news sources.
25. There is nothing wrong with Bible camps.
26. I hate being around non-progressive people.
27. Classroom discussions should be safe places that protect students from disturbing ideas.
28. University authorities are right to ban hateful speech from campus.
29. I should have the right not to be exposed to offensive views.
30. To succeed, a workplace must ensure that its employees feel safe from criticism.
31. We must line up behind strong leaders who have the will to stamp out prejudice and intolerance.

32. When we spend all of our time protecting the right to "free speech" we're protecting the rights of sexists, racists, and homophobes at the cost of marginalized people.
33. I am in favor of allowing the government to shut down right-wing internet sites and blogs that promote nutty, hateful positions.
34. Colleges and universities that permit speakers with intolerant views should be publicly condemned.
35. Getting rid of inequality is more important than protecting the so-called "right" to free speech.
36. Fox News, right-wing talk radio, and other conservative media outlets should be prohibited from broadcasting their hateful views.
37. Even books that contain racism or racial language should not be censored.
38. I don't support shutting down speakers with sexist, homophobic, or racist views.
39. Neo-Nazis ought to have a legal right to their opinions.

VAX Scale (Martin & Petrie, 2017)

Please answer the following questions about vaccinations on a scale of 1 (strongly disagree) to 7 (strongly agree).

1. I feel safe after being vaccinated (–)
2. I can rely on vaccines to stop serious infectious diseases (–)
3. I feel protected after getting vaccinated (–)
4. Although most vaccines appear to be safe, there may be problems that we have not yet discovered.
5. Vaccines can cause unforeseen problems in children.
6. I worry about the unknown effects of vaccines in the future.
7. Vaccines make a lot of money for pharmaceutical companies, but do not do much for regular people.
8. Authorities promote vaccination for financial gain, not for people’s health. Vaccination programs are a big con.
9. Natural immunity lasts longer than a vaccination.
10. Natural exposure to viruses and germs gives the safest protection.

11. Being exposed to diseases naturally is safer for the immune system than being exposed through vaccination.

Opinion of Trump Administration's Pandemic Response (Kempthorne, 2020)

Please respond to the following statements about the Trump administration's response to the coronavirus pandemic on a scale of 1 to 7, 1 being strongly disagree and 7 being strongly agree.

1. I am satisfied with how the Trump administration has responded to the pandemic.
2. President Trump has taken appropriate actions to keep Americans safe.
3. President Trump waited too long before taking action in response to the pandemic.
4. The Trump administration is doing more harm than good in response to the pandemic.

Public Health Official Opinion Scale (Kempthorne & Terrizzi, 2020)

Please respond to the following statements about U.S. public health officials' response to the coronavirus pandemic on a scale of 1 to 7, 1 being strongly disagree and 7 being strongly agree.

1. The Center for Disease Control (CDC) is doing a good job managing the pandemic.
2. I am satisfied with how U.S. public health officials are handling the pandemic.
3. American public health officials are incompetent.
4. U.S. Public health officials are doing more harm than good in response to the pandemic.

News Consumption Scale (Kempthorne, 2020)

Please answer the following questions about your news consumption habits.

Please rate how well the following statements describe you on a scale from 1 (Not at all like me) to 7 (Very much like me)

1. I check the news very often (Any source such as radio, TV, newspaper, online, etc.)?
2. I am very interested in the news.

Please answer the following question by checking all the boxes that apply

3. What sources do you rely on for the news? (please check all that apply)
    a. Fox
    b. CNN
    c. New York Times
    d. MSN/NBC
    e. Washington Post
    f. Huffington Post
    g. The Blaze
    h. The Federalist

i. The Guardian
j. POLITICO
k. The New York Post
l. Yahoo News
m. NPR
n. Los Angeles Times
o. Breitbart
p. BBC
q. The Daily Wire
r. CBS
s. The Intercept
t. Local news
u. Right-wing/Conservative Talk Radio
v. Left-wing/Liberal Talk Radio
w. Business news (The Wall Street Journal, Financial Times, The Economist, etc.)
x. Other_____

4. How much do you trust these sources on scale of 1-7?
    a. Fox
    b. CNN
    c. New York Times
    d. Brietbart
    e. The Trump administration
    f. U.S. public health officials

Attitudes Toward Donald Trump

Please answer the following questions about Donald Trump on a scale of 1 (not at all) to 7 (very much)

1. How supportive are you of Donald Trump?
2. How likely are you to vote for Donald Trump?
3. Do you believe Donald Trump is trustworthy and honest?

Attitudes Toward Joe Biden

Please answer the following questions about Joe Biden on a scale of 1 (not at all) to 7 (very much)

1. How supportive are you of Joe Biden?
2. How likely are you to vote for Joe Biden?
3. Do you believe Joe Biden is trustworthy and honest?

Demographics

Age: ____

Ethnicity:

__Hispanic or Latino

__Not Hispanic or Latino

Race (Check all that apply):

__White

__Black or African-American

__American Indian or Alaska Native

__Asian

__Native Hawaiian or Other Pacific Islander

Gender:

__Male

__Female

__Other_____

What is your religious affiliation?

__Christian - Protestant __Muslim

__Christian - Catholic __Jewish

__Hindu __Atheist

__Buddhist __Agnostic

__Not religious __Other_____

How would you describe your political views on a scale of 1 (Very liberal) to 7 (Very conservative) or not political?

What region of the U.S. are you located in?

g. Midwest
h. Northeast
i. Southeast
j. Southwest
k. West

What is the highest degree or level of education you have completed?

l. Less than high school
m. High school graduate
n. Some college
o. Bachelor's degree
p. Master's degree
q. Ph.D, law or medical degree

Which political party do you identify with?

a. Republican
b. Democrat
c. Independent
d. Something else

Please respond to the following statements about your personal experience with COVID-19.

1. Have you contracted COVID-19?
2. Do you know someone who has contracted COVID-19?
3. Has the COVID-19 pandemic had a negative impact on your financial situation? Y/N
4. Have you lost your job or had your hours reduced due to COVID-19? Y/N