MORAL FOUNDATIONS AND MASK USE:

WORLDVIEW RESPONSES TO THE COVID-19 PANDEMIC

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By

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ABSTRACT

The COVID-19 pandemic has presented many unique challenges to governments across the nation and around the world. One such issue is how to handle the issue of face masks in a remarkably polarized environment. While the research seems to indicate that a high rate of masking is important to managing the spread of COVID-19, a subset of the population has shown themselves reluctant to adopt regular mask usage. With much of this divide taking place along partisan lines, this research sought to better understand the worldview impact on mask usage by using an approach informed by moral foundations theory. This research shows that there does exist a positive relationship between the individualizing foundations (which are often favoured by political liberals) and voluntary mask usage, but no meaningful relationship is apparent between masking and the binding foundations favoured by conservatives. Furthermore, while the relationship between masking and political ideology is stronger than the relationship between masking and any of the moral foundations, political conservatives' reluctance to mask appears to somewhat diminish the more they associate with mainstream political parties. While moral foundations-based appeals may still have some utility in this area, several more generic policy tools that were not directly tailored to particular moral foundations also showed themselves promising. These positive indicators suggest that future government efforts to encourage masking, in addition to the somewhat definitive solution of mask mandates, may have a range of softer tools through which they can effectively reach their target.

Keywords: COVID-19, Face Masks, Moral Foundations Theory, Canada

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1. Introduction

The COVID-19 pandemic has dominated the attention of both policymakers and the general public since its emergence in early 2020. Indeed, while public health is always an issue of importance, the scale of the threat posed by a global pandemic and the need for strategies to deal with that threat rightly brought the issue to the forefront. For individuals, the issue of understanding and mitigating personal risk became a daily concern for many. While the citizenry wrestle with these issues, policymakers are tasked with the challenge of managing both long term and short-term interests, all while dealing with a limited data set. Though in many ways this is one of the core challenges of the policymaker generally, the health threat, time constraint, and possible ramifications of getting the policy wrong combine to make this a uniquely challenging issue. Still, at the root of policymaking lies the belief that the right policy implemented at the right time and in the right way can make an immense difference. The challenge, however, rests in getting those variables right.

This problem can be made much more challenging at times when there is an active debate in the public sphere. It is precisely this situation in which we found ourselves regarding the use of personal protective equipment, specifically the use of masks in public. While the debate has featured prominently in the United States, it also became an increasingly contentious issue in Canada as well (Dawson and Desai 2020). While debates over efficacy and liberty have often been central to resistance to masks, another factor seems to be relevant to the issue as well. In the United States the mask issue has largely divided along partisan lines, with Republicans being much more resistant than Democrats when it comes to wearing masks. According to one Gallup poll, 94 percent of Democrats claimed that they either always or very often wear a mask when outside the home, while that number plummeted to 46 percent when Republicans were asked the same question (Brenan 2020). In Canada, the more varied political landscape can make it somewhat more challenging to identify ideological trends the same way, yet undoubtedly some of these trends exist. As seen in data from the summer of 2020, regular mask use by supporters of the Liberals, New Democrats, and Bloc Quebecois was over 90 percent, while fewer than 70 percent of Conservative supporters responded that they did likewise. When further broken down by how individuals identify on a right-left spectrum, 94 percent on the left indicated they used masks as opposed to 68 percent on the right (van der Linden 2020). This divide, while certainly

not unique to the mask challenge, poses a curious problem. With an issue as pressing as the COVID-19 pandemic it is important to understand how best we can increase compliance with health guidelines when there seems to be an ideological barrier preventing at least one segment of the population from completely buying in.

2. Problem Statement

In wrestling with the issue of how to navigate ideological differences, it becomes important to understand that political preference and partisanship are but one way of understanding the distinctions that exist among us, many of which run deep. Indeed, it is evident that we live in a world marked by a great diversity of thought, preference, and position. On a simple level we can see that one society or culture may have a preference for a certain type of food, sport, or music, while another society may display quite different inclinations. Such differences may be a curiosity, but examined more closely we see the divide becomes even more difficult as we see that societies have fundamental differences in philosophies. Perhaps one of the clearest illustrations of this is given by Susan Strange (2015), who suggests a simplified view of societies as balancing interests in security, wealth, justice, and the freedom to choose. While some conception of these interests is present in each society, the value placed upon them may differ. For example, one society may consider security a paramount virtue, while others may be willing to sacrifice some security for a greater measure of freedom. Still other societies may prioritize the acquisition of wealth as a primary function and are willing adopt a lower value for justice and security to attain it. While there are many ways this may break down, the true challenge comes when societies come in contact with one another, as their different value structures can often lead to conflict. Even still, societies with similar value structures may be threatened by one another and similarly face tension. This problem is at the root of much of international politics, yet while the contrasts are stark at the international level, similar issues bedevil us domestically.

The domestic problem is a curious one. Indeed, while the common range of ideas and preferences may be uniform enough in a nation such as Canada as to resemble a common culture, points of difference still remain. Perhaps there is no greater indicator of this than the fact that political polarization has become an unavoidable feature marking the Western world, with Canada being no exception (Wang 2019). While there are many theories for why this

polarization has developed, there is evidence to support the assertion that the divide is rooted firmly in partisanship and ideology, with this pattern holding true even when media consumption is low (Owen et al. 2019). As a feature of our political system, this is a dynamic that feels naturally familiar. It seems increasingly evident that the one constant in our political and policymaking process is public disagreement. In that context, our ideological divide seems to be not so different from the situation posited by Strange in which societies or even subgroups in a community with variable values structures seem fated to clash. Certainly, much of our political process could be described as a struggle with the question of how to manage these divisions while still furthering a political agenda. When issues are about more than preference, this can pose a serious problem. While debates over tax codes, infrastructure spending, or natural resources have significant real-world impacts, there is a less of an immediate moral element to these debates, and the impacts, while often profound, can rarely be counted in lives saved or lost.

Handling the COVID-19 pandemic presents a somewhat more acute problem which is complicated by the chasm between the political left and right on legitimate public response. The use of masks highlights this challenge. Numerous medical studies have indicated that general mask use in public is a useful tool in restricting the spread of COVID-19 (Chu et al. 2020; MacIntyre, and Chughtai 2020; Konda et al. 2020), the Government of Canada and all provinces have recommended mask usage from early in the pandemic (Government of Canada 2020; Gilmore 2020; Tasker 2020), and there seems to be relative unanimity amongst Canadian leaders about the benefit of masks (van der Linden 2020). Nevertheless, compliance is less than full and some individuals and groups vigorously oppose using mask. With this being the case, it seems likely that there is some feature of the ideological divide itself may be contributing to the reticence of many Canadians (most identifiably conservative leaning individuals) when it comes to wearing masks. It is not enough to simply understand that there is a difference between partisans though. Should policymakers want to understand the full set of tools at their disposal to address this divide it is important to understand whether there are particular value structures that undergird this difference, or if it is instead merely a politically manufactured difference. Indeed, if all Canadians were applying the same values to the issue, but merely hearing different information or receiving pressure in different directions then the problem (and potentially the solution) is quite simple. If, however, what we are experiencing is more on the order of a clash of worldviews with competing priorities, the possible effective responses may look quite

different. Simply put, understanding the underlying cause of this conflict could provide invaluable information as government officials and health experts work to improve public cooperation with recommended safety measures for both this and other future public health emergencies.

3. Background

Studies regarding the efficacy of masks have largely demonstrated their usefulness. Experts have concluded that masks are positively associated with a lower risk of infection (Chu et al. 2020), even non-medical mask types appear to offer considerable protection (Fischer et al. 2020; Konda et al. 2020), and that these positive outcomes are still present in the community in the absence of other measures such as hand hygiene (though to a lesser degree) (MacIntyre and Chughtai 2020). Finally, it has been shown that if widespread masking occurs (at least 80 percent of the population), particularly before the disease is widespread in a particular population, it is likely to have a considerable impact in limiting the transmission of COVID-19 (Kai et al. 2020). Research of this nature was clearly enough to persuade governments to strongly promote mask use by spring of 2020, with the government of Canada recommending their usage, and provinces, including Saskatchewan, following their lead (Government of Saskatchewan NDG).[1] Despite the clear messaging from experts and governments, however, public opinion on mask use is more divided, with conservatives particularly being much less likely to voluntarily wear masks.

3.1. Cultural Cognition

In the area of ideological disagreement there is a wealth of research. This is no surprise considering the centrality of this type of conflict to Western democracies. What is important to this research, however, is the ideological worldview approach that explores why people hold strongly opposing views that seem to refute empirical evidence. Dan Kahan and his work on the Cultural Cognition Project has considerably furthered our understandings of how people at

[1] Following the undertaking of this study most regions also implemented mask mandates.

opposite ends of the political spectrum think, and why they disagree with one another. As Kahan and Donald Braman explain, "Citizens who agree that the proper object of law is to secure society's material well-being are still likely to disagree–intensely–about what policies will achieve that end as an empirical matter" (2006, p.147). They suggest that the reasoning for this "has less to do with differences in knowledge than differences in values" (Kahan and Braman 2006, p.169). The key idea – that even with the same data, worldview factors will lead individuals towards different outcomes – is the core idea behind the Cultural Cognition Project.

Kahan and his colleagues have used the cultural cognition approach to better understand many meaningful divides. In studying issues from climate change, to gun control, to nuclear power and more, they have been able to make important observations about how individuals come to adhere to particular positions based largely upon the values that they hold. Much of this research is based upon the formulation of risk assessments, but it has also been applied to demonstrate that cultural cognition can influence understandings about the presence of scientific consensus. This research has shown that there is a strong predisposition for individuals to associate the opinions that fit within their worldview as being supported by experts, and to value experts more highly when their conclusions better comport with their worldview (Kahan, Jenkens-Smith, and Braman 2010). It has further been shown that, in the case of conservatives, even when the individual scores highly on tests measuring open-mindedness, they are likely to still eschew scientific consensus for a view more at home within their political frame (Kahan and Corbin 2016).

In Canada, similar work has been done by Lachapelle, Montpetit, and Gauvin (2014), showing in a limited study the same worldview-induced dissonance north of the border. They further showed that the framing of an issue (either as a threat to the individual's worldview, or as a support to it), had an impact upon the respondent's willingness to consider an expert credible. This suggests both that, while Canada's political landscape may differ from its southern neighbour, the worldview approach to understanding the differences between the nations still can hold. Further, better understanding these differences may provide real opportunities for both understanding barriers to reaching a higher degree of compliance with health guidelines, and to improve messaging on public health.

Still, while there is much research into the cultural cognition approach that has yielded fruitful results, there have also been some doubts cast upon its fundamentally partisan model of worldview. While it is widely serviceable, the challenge of political knowledge as a possible confounding factor is a concern. It has been posited that individuals that have significant political knowledge tend to polarize between two segments of the worldview framework, while those lacking substantial political knowledge tend not to demonstrate consistent worldviews at all, suggesting that, in some cases, worldview may follow ideology rather than the other way around (Michaud, Carlisle, and Smith 2009). While this concern has been fairly well answered by further research showing that these issues seem to be largely alleviated by rigorous research methods, the relationship between political ideology and worldview are complex and must be controlled for in this type of research (Ripberger et al. 2012).

3.2. Moral Foundations

With the challenge of separating some of the confounding partisan elements inherent in the cultural theory approach, particularly with an issue as charged as the mask debate, the analytical approach could benefit from a worldview framework that is a step removed from the ideological and partisan battle lines. Furthermore, given the collective responsibility for public health, mask use is more than just subject to political preference; it presents certain moral elements. Moral sentiments have been shown to be an effective motivator for both preference and action across the political spectrum (Skitka and Bauman 2008).

Jonathan Haidt's Moral Foundations framework offers some prospects as an effective substitute for the more traditional model. Haidt's model relies upon elements of morality common across cultures (Haidt and Joseph 2004). Haidt later observed that, in the United States at least, there was a strong connection between an individual's political preference and the way that they constructed their moral framework. Simply put, it seems that "Political liberals construct their moral systems upon two psychological foundations–Harm/care and Fairness/reciprocity–whereas political conservatives construct moral systems more evenly upon five psychological foundations–the same ones as liberals, plus Ingroup/loyalty, Authority/respect, and Purity/sanctity" (Graham, Haidt, and Nosek 2009, p.1029). Graham, Haidt, and Nosek go on to explain that Harm/care and Fairness/reciprocity can be considered

individualizing foundations, while they group the latter three typically preferred by conservatives as *binding* foundations. Conservatives and liberals also tend to interact with these foundations differently. Of particular interest, when it comes to the care/harm foundation, conservatives prefer a more localized, loyalty influenced perspective, while liberals tend to a more universalist approach (Haidt 2012, p.158). Insights such as these seem invaluable when considering what root causes may be influencing the apparent partisan divide on an issue like mask use.

Beyond the ability to recognize the core of such differences, these differences may also be helpful in working towards better policy or better compliance with policy. Some evidence seems to suggest this may be the case. In a study to evaluate whether appeals based upon typically conservative or liberal moral foundations could have an impact on recycling behaviour, it was found that tailored approaches had a significant positive effect (Kidwell, Farmer, and Hardesty 2013). Other studies have been less definitive. When considering the issue more broadly, Day et al. found that, while appeals to moral foundations seemed to be quite effective in entrenching political opinions, they had more mixed results when they were used to change previously held positions. While liberals seemed more resistant to persuasive appeals, conservatives were generally more amenable to shifting their positions when confronted with a traditionally conservative moral frame (Day et al. 2014).

It is important to further note that this model has proven to be effective when it comes to understanding moral judgements in an international context, proving incredibly robust, even when cultural variables diverged significantly (Doğruyol, Alper, and Yilmaz 2019). This cultural malleability is particularly valuable to this project as it ensures that the results translate in some measure and removes some of the confusion over differences between terms such as 'liberal' or 'conservative,' as well as the inconsistencies between the left and right both international and intranationally.

Beyond providing a generally effective framework for understanding the differences we see along moral and political lines, moral foundations theory also holds some interesting possible relevance for the issue of mask usage. As noted, there are certain moral elements to the mask usage issue, and the different foundations may interact with the issue in varied and interesting ways. Some of these possible connections are fairly plain. For example, the harm/care foundation is in some ways at the core of much of the present issue in that, the obligation to not

harm others is always likely to be a key motivator in the midst of a public health crisis. Further though, the fairness/reciprocity foundation also has a particularly plain connection to the issue of masking. With personal masking being largely an issue of providing protection for others rather than oneself, concerns over reciprocity are likely to be triggered. So far as the binding foundations go, while the connection points are not always as central, it is still possible to see how they may be triggered. For one, the ingroup/loyalty foundation could have interesting and different effects depending upon the group in question. While in some cases it could reinforce either pro or anti-mask sentiments, it also can attach to the harm/care foundation and trigger that foundation in a localized way. Authority/respect is also an interesting area, in that it is likely to be triggered when appeals are made by authority figures, but crucially, the individual must see the authority figure in question as a legitimate authority. Lastly, the purity/sanctity foundation, while having no simple connection, is well rooted at its foundation with a sense of tradition and some aversion towards new things or rapid change (Haidt 2012, p. 172-173). Seeing as masking in public is very new for Canadians and may seem strange to some, it is quite possible that this alone could trigger the purity/sanctity foundation and create a wariness that could be at the root of some aversion to masking.

3.3 Tools Based Approach

While the moral foundations approach to the issue offers the possibility of valuable insights into how attitudes are shaped, it is also important to ensure that these are understood in reference to real life policy responses rather than merely abstract attitudes. In this instance a traditional tools-based approach to the topic offers the ability to directly engage in insights about policy prompts that may yet further advance an understanding of how worldview may shape preferred policy responses. The simple idea of a tools-based approach is that governments have a range of policy tools available to them, and using the right tools in the right way is crucial to ensuring that policy is effective.

A useful conception of the tools-based approach is the one developed by Christopher Hood in 1983, and later updated in 2007 (Hood and Margetts). In what he refers to as his 'NATO' system, Hood suggests four general resources that government has at its disposal to influence action. The first resource is nodality, or "the property of being in the middle of an information or

social network… Often [sitting] in some central place in their domain – the Rome to which all roads lead" (Hood and Margetts 2007, p.5). So long as the government has credibility, this nodality allows them to take in and disperse information to achieve their goals. Next, governments may act by means of authority, and in doing so they may set restrictions and obligations to achieve a particular end. The third system is treasure, or the idea that governments have the ability to use monetary – or monetary like – tools to influence, gain information, or pay for 'mercenaries'. Lastly, governments have tools of organization, which consists of the capacity to use their own existing personnel, programs, and departments to pursue their objectives (Hood and Margetts 2007).

An important component to an effective use of the tools approach is that the result sought by a policy ought to be reached in the most effective way possible, with the least possible burden and intrusion upon the citizen as can be achieved (Margetts and Hood 2016, p.143). This notion of balancing what is effective with what is overly onerous is a real challenge, particularly when addressing an issue as important as the current health crisis. While strong uses of authority, such as mandating masks in all public areas at the risk of fines or legal penalties, are often presented as the simplest route forward, they run the risk of violating the principle of using the most economical policy possible. Certainly, it is important to evaluate whether there are less intrusive methods that could have been, or still could be, effective in the Canadian context, and whether the tools used are more or less effective dependent on individual worldview.

4. **Methods**

To test the relationship between moral foundations and mask use, I developed and administered a survey with the assistance of the Social Science Research Laboratories (SSRL) which contracted with AskingCanadians to secure an appropriate sample of English-speaking Canadians. The survey was reviewed and approved by the University of Saskatchewan Research Ethics Board (BEH 2442). Both the survey instrument and ethics approval are attached as appendices. It is important to note that it was decided to pull respondents only from the provinces of British Columbia, Alberta, Saskatchewan, Manitoba, and Ontario that were 18 years of age or older at the time of the survey. The province of Quebec and the Atlantic provinces were excluded due to concerns over longstanding regulations regarding mask use complicating

the results, as well as budgetary limitations and costs related to translation of the survey into French for Quebec and NB. While still targeting the majority of the country, it was not a nationwide survey.

The survey begins by applying the moral foundations questionnaire, as developed by Jonathan Haidt, along with questions about both attitudes towards wearing masks, as well as individual behaviour regarding masking. Approaching it this way was important to determine if there was a gap in opinion and action, as a matter of distinguishing whether the subjects are truly committing to the recommended safety measures, or merely following social cues or local requirements. This is important as, if the latter is the case, it may indicate less commitment to wearing the masks in situations where there is less pressure to do so or the government's authority wanes.

Next, I prompted participants with a range of possible policy solutions and scenarios derived from the tools-based approach originally developed by Hood. These included measures such as various forms of dissemination of information as a use of nodality, punitive restrictions for authority, and both direct and indirect financial incentives for treasury. The final category of tool, that of organization, mapped less directly onto particular policies, but would be a central element in the execution of several of them. Using sliders the participants responded to these prompts with indications of whether the policy would make them more likely to adhere to the Health Canada recommendations on mask use.

The survey tried to identify as many potential confounding factors as is reasonable, including factors of age, income, possible comorbidities or close contact with at-risk individuals, local regulation, social pressure, direct experience with the virus, etc. Political preference and engagement were also considered as both have the potential to act not only as possible confounding factors, but were are important references for understanding whether the moral foundations questionnaire provided a useful gauge of the partisan political divide that has been measured by others.

Once the data was collected, it was evaluated primarily using a cross tabulation approach. The results were examined to try to understand whether a traditionally-conservative moral framework correlated with resistance to wearing a mask more than a more traditionally liberal moral framework. I also probed the strictly ideological markers of the relationship to better

understand their root. The data was further examined to understand if a high association with any particular moral foundation indicated a strong resistance or support for mask use and whether this was tied to any specific worldview. These possible relationships were evaluated using a Spearman correlation to test the strength and statistical significance of any such relationship. Lastly, the possible influence of the tools-based interventions was also examined. This was done by looking at how participants reacted to each probe, how mask-resistant people interacted with them as a group, as well as what role moral foundations may play in the preference of different approaches.

5. Survey Results

5.1 Full Sample

To administer the survey, AskingCanadians reached out to potential candidates from their network in a digital format and returned a sample of 501 respondents. All responses were collected in mid-January of 2021. Participants received a small amount of compensation in the form of reward points from one of AskingCanadians partner programs. The respondents were evenly split between male and female, while representing a diverse range in terms of age, education, employment status, region, and income.[2]

Upon reviewing the results, it was evident that there were some issues with a certain percentage of the respondents returning unusual samples. There were two catch questions in the moral foundations section of the survey, and while these check questions have been used by others to clean their data sample (Jansson and Dorrepaal 2015; Graham, Haidt, and Nosek 2009), the check proved insufficient to remove many of the notably egregious cases of inattentiveness. Instead, to remove extraneous samples the standard deviation for each individual's responses to the Moral Foundations Questionnaire was calculated. This task was performed for each foundation, and then the average score for each individual was calculated across all five foundations. The idea is that on the low end it would reveal individuals that used the same

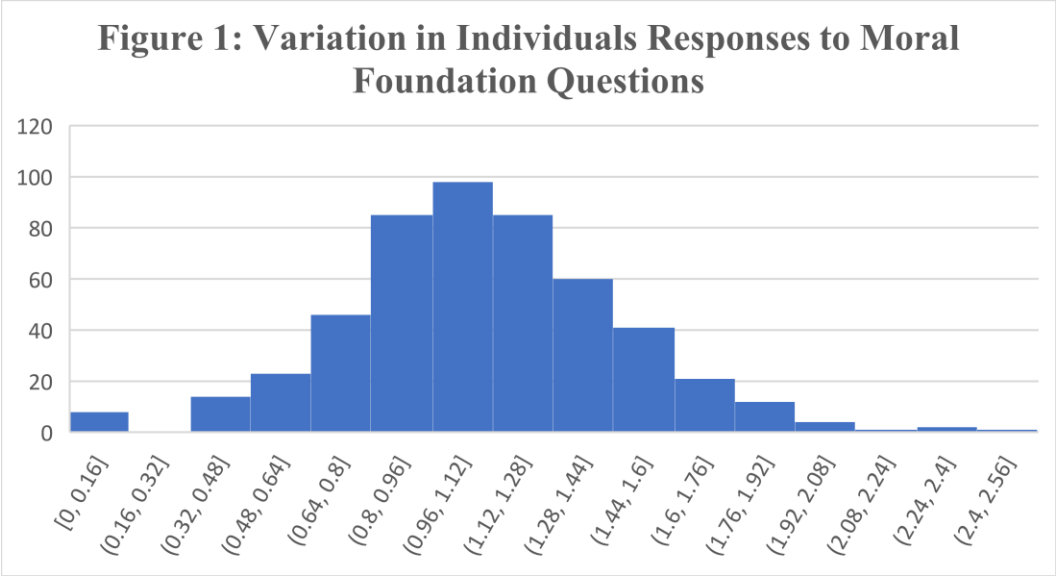
[2] There was a typo in the administered survey that resulted in one of the age ranges showing up incorrectly. AskingCanadians was able to provide the information from database to correct this error. While the issue was corrected for all that chose to provide their age range, it is possible that this mistake may have led to slightly higher rates of individuals using the "prefer not to answer" option.

response for every question (ie. selected 1 for every answer), and at the high end would reveal individuals that did not demonstrate any consistent, cohesive moral worldview (i.e. some may have filled in the survey randomly).

As seen in the figure 1 there was a small well-defined group of respondents on the low end (largely comprised of people that selected response for every question resulting in a deviation of 0), but a less well-defined group of outliers on the upper end.

I found that on the low-end variations of 0 to 0.55 indicated nearly entirely homogenous responses in section one and section two (as the questions were broken up into two different pages on the digital survey). It is assumed that this was mostly due to respondents not reading the questions and merely selecting the same response for each query. This hypothesis is supported by a very low percentage of participants in this range passing the check questions, for which the most generous scoring would still leave a 25 percent random success rate. Based on this I removed the 30 samples in this range.

At the high end of the range there were fewer issues with failed checks or entirely uniform answers. There was, however, reasonable evidence of slightly randomized patterns (i.e. varying between option 1 or 2 in the first section and 5 or 6 in the second section). As there is. one check question in each section and the first one encourages using the low end of the scale, while second encourages using the high end of the scale, people answering this way were likely to pass the check questions. Importantly though, answers on this end of the spectrum largely lacked any semblance of order in their worldview. For example, there were some at this end of the spectrum that answered that "Whether or not someone cared for someone weak or vulnerable" was not at all relevant to their moral thinking, while simultaneously strongly agreeing that compassion for those that are suffering is the most important virtue or the other way around. Indeed, at this end of the spectrum their responses to all six questions targeted at each response was often similarly polarized. After analyzing the samples, I decided to cut off anything above an average variance of 1.5. There is no perfect reason for this beyond that a visual examination indicates that this removed most of the egregiously disordered samples, while choosing a round number was a way of minimizing whatever limited amount of bias may have been introduced by the visual examination. This eliminated a further 69 respondents.



Lastly, I instituted a check that examined whether respondents chose the same response for all questions (including check questions). The cases that were flagged by this check were nearly all eliminated by the above filtering, but one sample that wasn't caught at either end of the spectrum was also removed.

5.2 Filtered Sample

After filtering the sample down to 401 respondents, the split was 50.9% male, 48.1% female. Geographically, 71.3% of the sample reported that they live in a large urban setting, with 27.9% answering that they did not, with 35.2% residing in Ontario, 20.2% from British Columbia, 14% from Alberta, 13% from Manitoba, and 17.7% from Saskatchewan (totaling 44.7% from the three prairie provinces). While this indicates some overrepresentation of the prairie population at the particular expense of Ontario's representation, the figures allow for a more representative sample of each province and was not deemed to have a great enough impact as to necessitate weighting the results regionally. Ethnically, the majority of respondents were Caucasian (73%), with the largest minority population being Asian at 17%. A variety of other ethnic minorities came in between 1% and 3.4%.

One of the key differentiations between this survey pool and many of the other studies done using MFT comes in the way the sample was collected. Many of the published works available,

including the foundational research, all used the YourMorals online tool (YourMorals.org) which, due to the ways in which most participants are connected to it, tend to be disproportionately "liberal, male, young, and higher in years of formal education" (Christie et al. 2015, p. 233). In this sample 6.5% were in the 18-24 age bracket, 20.2% were 25-34, 16% were 35-44, 20.4% 45-54, 13.5% 55-64, and 22.4% were 65 and older. Regarding education, 54.2% indicated that they had at least bachelor's degree, which is nearly exactly in line with the data from Canada's most recent census data (Statistics Canada 2017).

Politically, 39% of respondents identified as being politically liberal, 33.3% identified as politically conservative, with 11.4% considering themselves to be centrists.[3] When looking at engagement in federal politics, 20.8% indicated high levels of political engagement,[4] with a plurality being moderately engaged (36.1%), 28.1% being slightly engaged, and the final 15% suggesting they were not at all engaged. When it comes to voting behaviour, the respondents were asked to indicate only who they voted for in the 2019 federal election, to which 27.7% suggested that they had voted for the Conservative Party of Canada, 29.9% for the Liberal Party of Canada, 12.2% for the New Democratic Party, while the remaining 30.2% indicated either that they voted for another party, did not vote, or preferred not to answer the question.

5.3 COVID-19 Responses

The respondents were asked a variety of questions regarding the COVID-19 pandemic, including questions regarding their experience, personal risk, perspectives, and response. Of the participants, 42.1% responded that they had a direct experience with the virus, either by catching it themselves or by knowing someone that contracted COVID-19. Regarding the risk profiles of the respondent, 37.9% indicated that they believed themselves to be either slightly high risk high risk, or very high risk when it came to serious complications from the disease, with another 24.2% placing their risk at moderate. When asked about contact with high-risk individuals (either in their household or outside of it), 38.4% suggested this was a regular part of their lives, including approximately one quarter of the respondents that believe themselves to be personally

[3] The other 16% of respondents either choose not to answer, did not know, or identified themselves by some other means (ie. socialist, libertarian, etc.).
[4] 16.2% responded "very engaged" and 4.6% responded "extremely engaged."

low risk. All-together, this puts the total respondents that either believe themselves to be at a moderate or above risk level or are at very least in contact with individuals that they believe are high risk at just over 70%.

In addition to assessing the risk in their immediate sphere, participants were asked, "How great of a threat do you believe COVID-19 is to the health of the public at large." To this, 61.1% indicated that they believed it is a very serious threat, with another 27.9% perceiving the threat as moderately serious. Only 9.7% believed that the threat was mild or that there was no threat at all. Furthermore, participants were asked about their understanding regarding the efficacy of masks at limiting the spread of the virus. The largest portion perceived mask as being either very effective or completely effective (63.3%), with another 22.9% seeing them as somewhat effective, 7.5% believing they are only slightly effective, and only 4% believing they are not at all effective.

5.4 Masks

Regarding mask usage, the sample was broken into two groups. The first group consisted of all those that were aware of some form of government level mask mandate in their jurisdiction, while the second group was comprised of all those that were not aware of any mask mandate in their region at the time of the survey. For those that were aware of such a mandate, they were asked about their mask usage in the period before such a mandate was imposed, while the second group was asked about their behavior patterns over the previous two weeks. For all analysis on mask usage these two groups were combined,[5] and after doing this the totals showed that 26.4% never wore a mask, 10% did so infrequently, 7.7% about half the time, 15% most of the time, and 40.9% wore a mask every time.[6] Notably, this means that nearly 70% of the sample indicated absolute consistency in their behaviour (either using masks or not using them in every instance where they had agency in the matter), reinforcing the apparent polarization on the

[5] Only 37 of the 501 respondents were a part of this second group, and while there was somewhat higher representation of mask use among this group (54.1%), there was also a significant percentage that indicated never using masks when they had the choice (18.9%).

[6] Specifically, the respondents were asked how often they had worn a mask "while in enclosed public spaces, stores, and/or businesses where it was not required."

matter. While a significant proportion of the sample still find themselves taking a less rigid approach, the divide is noteworthy.

It important to note that having asked the question this way may have imparted some variability into the results. Indeed, not all jurisdictions implemented restrictions at the same time and as such, in addition to the fact that respondents are being asked to accurately recall their behaviour, there may have been other factors that may have influenced that behaviour in the time between the implementation of mandates. In this case, it was determined that the benefits of asking the behaviourally-oriented question outweighed the risks. In particular, it was thought that asking people to reflect upon their patterns of behaviour as opposed to their current perspectives on what they would do if given a choice would lead to a better representation of actual behavioural patterns despite the aforementioned challenges.

Lastly, when asked about their approach to wearing masks in public places, 5% said they would never wear a mask, while a further 11.7% said they would only do so if required. Just under 10% would do so if they had a mask with them or it was provided, 32.2% would wear one when unable to physically distance, and the final 41.9% would always wear a mask. When further asked about their attitudes on wearing masks in public the majority of respondents said that while they don't like wearing masks, they do it because "it's the right thing to do." When combined with those that claimed to be happy to wear a mask this group comprised 86.4% of the sample suggesting that, at very least, the vast majority of the sample had either no issue wearing masks, or were sympathetic to the view that doing so was a moral act.

5.5 Moral Foundations

When it came to administering the Moral Foundation Questionnaire, the questions are broken into two sections. In the first section the participants are asked about the extent to which particular considerations are relevant to their determination of right or wrong, and in the second section they are asked to what extent they agree or disagree with a list of statements. In both sections each of the moral foundations (harm/care, fairness/reciprocity, ingroup/loyalty, authority/respect, and purity/sanctity) correspond to three responses, and based on how the question is answered the participant is given a score between 0 and 5 (0 indicating no discernable

value for that foundation and 5 indicating a very strong value). In the end, responses for each foundation were tallied with the average for each foundation becoming each respondent's score in that particular moral foundation.

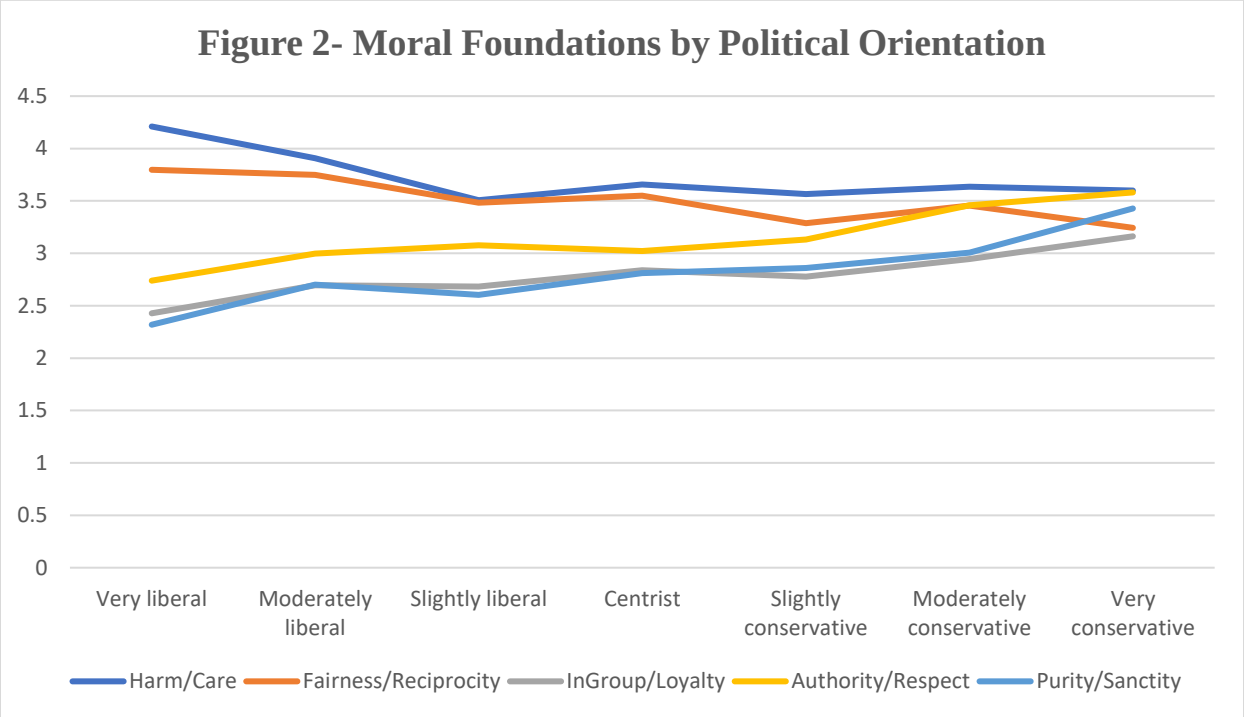
Table 1: Foundation Score Overview

	Harm/Care	Fairness/ Reciprocity	InGroup/ Loyalty	Authority/ Respect	Purity/ Sanctity
Mean	3.6858	3.51	2.7868	3.1297	2.7938
Median	3.8333	3.6667	2.8333	3.1667	2.8333
Std. Dev.	0.81149	0.68448	0.85378	0.79062	1.00914

The totals were higher overall than expected based on the previous studies (see Graham et al. 2011). It is notable that the latter three 'binding' foundations (those being the ones generally favoured by conservatives), while yielding lower absolute averages, were markedly higher than in previous studies. The significant difference on the latter three foundations is likely in part due to many of the previous studies disproportionately sampling younger, more liberal individuals. Still, when the data is disaggregated by political persuasion (as in table 2), the results remain unexpectedly high. This is most clearly seen in liberal respondents having much higher scores in the binding foundations than expected. This deviation was not entirely expected, though there is some literature to suggest that Canada may present some distinct challenges when it comes to mapping cultural theories onto the Canadian political spectrum. This may be due in part to a history of Canada's major cleavages being largely a compilation of language, religion, and geography rather than class-based, leaving a sometimes weaker ideological distinction along left-right lines, particularly as it relates to voting behaviour (Kiss, Montpetit, and Lachapelle, 2020; Lijphart, 1979). Furthermore, prior research on MFT had indicated that the margins between left and right were likely to be tighter in Canada as opposed to the United States (Graham et al., 2011). But when compared against one another, the relationships relevant to liberal and conservative respondents is still as expected (that is to say that the liberals consistently post average higher scores than conservatives in the individualizing foundations, while scoring lower in the binding foundations).

Table 2: Moral Foundations by Political Orientation

Political Self ID		Harm/ Care	Fairness/ Reciprocity	InGroup/ Loyalty	Authority/ Respect	Purity/ Sanctity
Liberal	Mean	3.8313	3.6779	2.6534	2.9847	2.6186
	N	163	163	163	163	163
	Std. Dev.	0.78086	0.66515	0.92444	0.79905	0.99824
Centrist	Mean	3.6583	3.55	2.8375	3.0208	2.8125
	N	40	40	40	40	40
	Std. Dev.	0.74051	0.52596	0.88714	0.72224	0.98362
Conservative	Mean	3.6045	3.347	2.9565	3.398	3.0796
	N	134	134	134	134	134
	Std. Dev.	0.75085	0.68431	0.68974	0.71238	0.99408
Other/Unknown	Mean	3.5026	3.3984	2.7396	3.0052	2.6302
	N	64	64	64	64	64
	Std. Dev.	0.99003	0.73079	0.90991	0.8378	0.9684
Total	Mean	3.6858	3.51	2.7868	3.1297	2.7938
	N	401	401	401	401	401
	Std. Dev.	0.81149	0.68448	0.85378	0.79062	1.00914



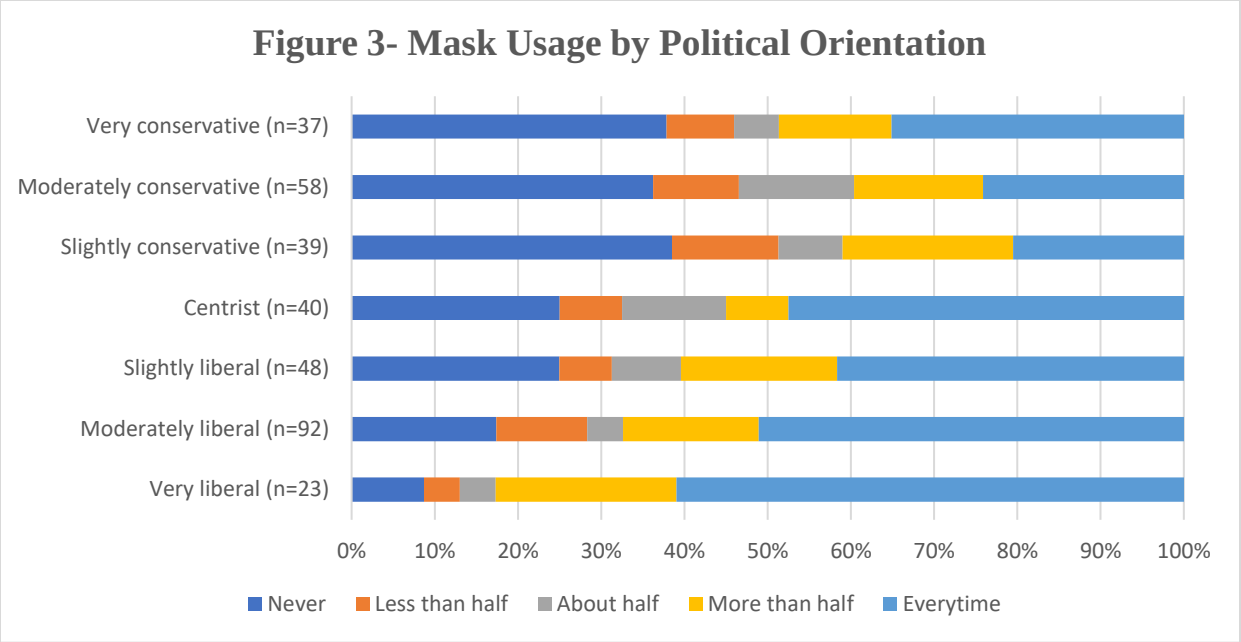
6. Analysis

6.1. Mask Usage and Political Preference

To begin the analysis, I first simply compared responses regarding mask usage against a few factors of interest (moral foundation scores, political preference, etc.). The first item of interest was testing the supposition that conservatives were less likely to use masks. In fact, our results indicated an even lower overall rate of voluntary compliance than was indicated in previous surveys. This may have been due in part to our geographic limitations or possibly the framing of the question as we queried specifically about voluntary behaviour rather than general usage (which may have included regions with mandates, or may have been influenced by policies put in place by private businesses). Regardless, the data still demonstrated that there existed a distinct gap between individuals on the right and left when it came to choosing to wear a mask. This difference was particularly noticeable at the extremes of the spectrum with roughly 50% of self identified liberals indicating that they wore a mask every time they were in enclosed public spaces, stores, or businesses, while only 26.1% of conservatives answered the same way. Conversely, 37.3% of conservatives suggested that they never wore a mask in these situations, as compared with 18.4% of liberals. Interestingly, while the majority of individuals found themselves at either pole, the options in between the never or always voluntarily wearing masks options were more evenly populated across the ideological divide.

Table 3: Political Self ID/Mask Usage Crosstabulation

Political Self ID		Never	Less than half of the time, but at least once	About half of the time	More than half of the time, but not every time	Every time	Total
Liberal	Count	30	14	9	29	81	163
	% of Liberals	18.40%	8.60%	5.50%	17.80%	49.70%	100.00%
Centrist	Count	10	3	5	3	19	40
	% of Centrists	25.00%	7.50%	12.50%	7.50%	47.50%	100.00%
Conservative	Count	50	14	13	22	35	134
	% Conservatives	37.30%	10.40%	9.70%	16.40%	26.10%	100.00%
Other/Unknown	Count	16	9	4	6	29	64
	% of Other/Unknown	25.00%	14.10%	6.30%	9.40%	45.30%	100.00%
Total	Count	106	40	31	60	164	401
	% of Total	26.40%	10.00%	7.70%	15.00%	40.90%	100.00%



Looking more closely at the overtly partisan markers, individuals that voted for the Conservative Party of Canada in the last federal election were marginally more likely than the average ideological conservative to choose to wear a mask frequently, and about 5% less likely to refuse to ever wear one. In fact, the group most likely to reject mask usage wherever possible were non-voters and those that voted for minor parties.[7][8] The number of people that voted for minor parties in this sample is too small to generalize about, though it is possible that the documented predisposition of such voters towards political discontentment (Belanger 2004), and a desire to shift major parties towards themselves (Schimpf 2019) make this group more likely to deviate from mainstream norms. Furthermore, the role of the party itself may be a meaningful factor as it has been shown that over time voters will tend to align themselves more closely with the positions espoused by the entity that they support (Harteveld, Kokkonen, and Dahlberg 2017). As noted earlier, the leaders of the major parties in Canada all supported mask use and it is possible that this already has a measurable impact.

[7] This conception of minor party does not include the Green Party whose respondents were in fact the most likely to report strict mask usage, but does include the People's Party of Canada, as well as all other parties that were not electorally viable competitors in any of the Canada's 338 ridings.

[8] The roughly 11 percent of people that preferred not to reveal their vote preference were polarized on the issue of mask usage, indicating an above average aversion to mask usage, as well as an above average likelihood of consistent usage.

Perhaps more interestingly in this sample set, however, are the non-voters. These respondents were about 10 points more likely to reject mask use than the sample at large, and while it is perhaps not surprising that many of these individuals were non-ideological in nature, those that expressed a partisan preference more commonly tended towards the liberal side. Again, the typology of the non-voter may be enough to classify this aberration as related to a common theme of dissatisfaction or disinterest that ranks highly in Canadian's reasons for not voting (Statistics Canada 2016), but this would require a closer examination not undertaken in this study.

All told, while acting as a reasonably effective predictor of which individuals may be reluctant to wear masks, the data seems to bring into doubt the idea that mask usage is an overtly partisan issue in Canada. This is somewhat predictable based upon the treatment of the issue by major party leadership from across the spectrum, but importantly it seems to indicate that the issue cannot be fully understood by looking merely at partisan lines.

6.2. Moral Foundations and Masks

Having examined the role of partisanship and political orientation in the sample, the next step is to examine the impact of disparate worldviews as tested by the Moral Foundations Theory. The primary step of this was to compare the average scores from each foundation based upon responses to mask usage. While the tighter overall grouping seen in the foundations from the full sample suggested it was unlikely that the raw numbers would show a stark divide between those on either side of the mask use question, the raw numbers offer important insights regarding the general trends in the data set.

Examining this data (Table 4), perhaps the most intriguing result is that the three binding foundations are remarkably stable at the polar ends of the mask usage question. The median mask usage responses in these binding foundations are likewise interesting. When considering only those that indicated anything from infrequent to frequent but not ubiquitous mask use, the figures hinted at some direction. In both the authority/respect foundation, and the purity/sanctity foundation, there was a discernable negative correlation between the scores and mask usage. Alternatively, the ingroup/loyalty foundation showed no pattern, with results rising and falling

between each tier of responses. Overall, these results, given the smaller samples in the median responses, are not strong enough to dismiss the larger samples at either pole.

Table 4: Mask Usage/Moral Foundations Crosstabulation

Mask Usage		Harm/ Care	Fairness/ Reciprocity	InGroup/ Loyalty	Authority/ Respect	Purity/ Sanctity
Never	Mean	3.6148	3.3931	2.772	3.1399	2.7752
	N	106	106	106	106	106
	Std. Dev.	0.80684	0.68552	0.8766	0.75106	1.01211
Less than half of the time, but at least once	Mean	3.4083	3.3875	2.7417	3.2	3.0167
	N	40	40	40	40	40
	Std. Dev.	0.91205	0.72047	0.86557	0.89331	0.91816
About half of the time	Mean	3.543	3.4355	2.914	3.1344	2.914
	N	31	31	31	31	31
	Std. Dev.	0.84543	0.69346	0.76724	0.67689	0.93875
More than half of the time, but not every time	Mean	3.6222	3.5389	2.6861	3.0667	2.6389
	N	60	60	60	60	60
	Std. Dev.	0.87756	0.71858	0.72101	0.80966	1.00665
Every time	Mean	3.8496	3.6189	2.8201	3.128	2.7856
	N	164	164	164	164	164
	Std. Dev.	0.72993	0.64925	0.89971	0.80949	1.04137
Total	Mean	3.6858	3.51	2.7868	3.1297	2.7938
	N	401	401	401	401	401
	Std. Dev.	0.81149	0.68448	0.85378	0.79062	1.00914

When looking at the mask use question in the context of the individualizing foundations, a clearer trend presents itself. When examining the harm/care foundation, the scores show a general upward trajectory as people indicate a greater frequency of mask usage. Somewhat confounding, however, is the fact that the 'never' responders to mask usage are the one category that disrupts the trend line. While these respondents have, on average, lower harm/care scores than individuals that exhibited frequent mask usage, their harm/care scores were nevertheless higher than those indicating they wore masks about half the time or occasionally. While seemingly unusual, this slight aberration does not significantly disrupt the overall trend on display.

Considering the individualizing foundation of fairness/reciprocity, mask usage is clearly positively associated with higher scores in these groups. In this category we see increased foundation scores with nearly every usage grouping (with the exception of those that use masks never or infrequently, who were nearly identical in scores). Furthermore, this foundation also has the smallest standard deviation by a substantial margin, and this consistency was found not only in the sum of all responses, but also in each grouping of mask usage.

The data seems to suggest then that there exists some relationship between mask usage and the individualizing foundations, but not with the binding foundations. This is borne out further by a deeper analysis of the data. In this instance a Spearman test was run to examine the statistical significance of any possible relationships. As can be seen in Table 5, virtually no relationship was found to exist with the latter three binding foundations. On the other hand, for the individualizing foundations, while the correlation coefficients were still relatively low, there was a high degree of significance associated with these positive relationships. For the harm/care foundation the Spearman test indicated a better than 99% certainty that there was a real, modest positive correlation, while the same test applied the fairness/reciprocity foundation also rendered a certainty of over 99%.

Table 5: Mask Usage vs. Moral Foundations Correlations

Spearman's rho	Harm/Care	Fairness/Reciprocity	InGroup/Loyalty	Authority/Respect	Purity/Sanctity
Correlation Coefficient	0.148	0.144	0.03	0	0.001
Significance	0.003	0.004	0.548	0.995	0.983
N	401	401	401	401	401

All together these results suggest that the moral factors influential in mask usage are not consistently tracked through the binding formations. This is not to say that these influences are altogether absent on the individual level, but rather that they can not be shown to track consistently through the population. For example, while one individual with a high score in ingroup/loyalty may not find membership in any groups in which the mask issue is considered meaningful, others may find themselves strongly influenced in either direction depending upon prevailing attitudes or their tribal loyalties. This is of particular interest as it may be one of the

confounding factors for the politically conservative that associate closely with various conservative organizations. Indeed, while the Conservative Party of Canada was relatively pro-mask, conservative outlets such as Rebel News (2020) and individual politicians on the right have taken something of an anti-mask stance (Woods 2021; Giesbrecht 2021). Similarly, authority/respect is at least somewhat dependent upon who is perceived as a legitimate authority, and there is no natural 'traditional' position to default to on an emergent issue such as mask usage in a pandemic.

The relationship with the individualizing foundations on the other hand is quite natural. Concerns about harm are a natural fit with responsiveness to medical concerns, while fairness/reciprocity conforms well to the notion of wearing a mask to protect others and trusting that they will do the same. It also seems sensible that the impacts of these foundations have less room for variable interpretations. Certainly, there are those that have made harm/care appeals to oppose mask usage. Some have latched onto argument that masks are potentially harmful to children's health (Yee 2021), while others have raised concerns about the potential impairment of socialization in children brought on by masks (Grose 2020; Gori, Schiatti, and Amadeo 2021). Overall, however, while these perspectives may have had some impact on this data set (particularly in why the harm/care foundation is a bit higher than might be expected among those that suggest they never voluntarily mask), these seem to have been comparatively minor concerns when compared with the broader public health risks.

6.3. Policy Tools and Preferences

6.3.1. Tool Efficacy

When it came to evaluating how these attitudes mapped onto policy preferences respondents were asked a series of eleven questions that broadly mapped onto Hood's conception of tools. Each policy probed the likelihood of increasing the respondents personal mask usage. With this in mind, all respondents that indicated that they used masks every time they were in enclosed public spaces were excluded from responding to this section of the survey as their habitual usage could, presumably, not be increased. It is worth noting that while it would have been possible to have framed this question as a matter of policy preference rather of behaviour (and thus retain the entire sample), polling based on behaviour offered a better insight into the potential real

effect of these tools. Filtering in this way left a sample of 237 that offered responses to this section of the survey. The prompts they were given ranged from scenarios or policies such as fines for not wearing masks, various messaging regarding masks, different financial incentives, or ease of access to masks.

The majority of these scenarios yielded broadly similar results, with about 15% of respondents (give or take a few points) suggesting that the tool was not at all likely to increase their personal mask usage. In most cases the "extremely likely" option was slightly more popular, while a substantial majority typically indicated that the prompt was anywhere between somewhat likely and very likely to increase their mask usage, with responses distributed relatively evenly between the three median replies.[9] There were a few notable outliers to this pattern, however. Unsurprisingly, the application of authority (in this case the risk of a substantial fine) was overwhelmingly more likely to increase mask usage, with only 13 respondents (a mere 3.2% of the full sample) suggesting that this would not alter their behaviour. Indeed, very few wavered over the idea that they would risk a government imposed financial penalty for non-compliance, with over 75% feeling that they would be very or extremely likely to increase usage under these conditions.

After the use of fines, the next clearly effective solution was simply that public buildings/businesses supplied face masks upon entry. This was notably more popular than other policies that improve convenience without increasing expense (such as receiving free masks by mail) and seems to indicate that the additional action of carrying a mask may be a meaningful barrier to some. This may be an example of the status quo bias, with people preferring not to make changes to the default status and preferring to avoid changes to their routine (Samuelson and Zeckhauser 1988). In this case, being given a mask at the moment of need seems to be considered preferable to the notion of forming the habit of carrying one everywhere, even though the acquisition of the masks does not require a break from routine in either case.

At the other end of the spectrum, the offer of rebates for masks and individually targeted government messaging were relatively less likely to motivate a response. Of these the targeted messaging in particular saw a combination of high numbers of people believing it would have

[9] For the exact breakdown of responses to the prompts please see Appendix D.

little to no effect on their behaviour, as well as very few anticipating that it would have any positive impact. On the other hand, rebates for reusable face masks drew a more bifurcated response, with many believing there would be either not at all likely, or only somewhat likely to have any effect (38%), but a substantial number (43%) responding that it was either very or extremely likely to increase usage. Interestingly though, despite medical style masks being on average somewhat preferable to reusable cloth masks in terms of efficacy (Chughtai, Seale, and Macintyre 2020), respondents were more overwhelmingly disinterested in the same rebate offer for the purchase a personal supply single use masks. Further examination would be required, but this may again have something to do with a preference for minimal intrusion upon 'normal' life (only making a one-time purchase as opposed to having a supply that you need to restock). Alternatively, it may indicate that the efficacy variable is not well understood by the general public, or merely that individual preference for reusable masks is stronger than the desire for somewhat higher function.

6.3.2. Reaching the Unmasked

Breaking these results down further, it is evident that there is a small group of respondents that are rigidly opposed to nearly every intervention. When asked earlier in the survey about their approach towards mask usage, 20 respondents suggested they would never wear a mask under any scenario in which it was voluntary. In the end, this was an excellent indicator of the rate of strong resistance to the prompts with a minimum of 20 respondents always suggesting that each proposed scenario, with the exception of the fine, would likely illicit no behavioural response. While this group was not entirely static, 13 of its members remained consistent, with another 6 only deviating slightly to "somewhat likely" for one or two responses. While defining a cut-off point could alter the number of respondents slightly, in aggregate this group represents a small block of individuals that are so set in their position as to be effectively unreachable by any non-coercive measures.

These roughly 20 unreachable subjects comprised only a small minority of the 106 that never wore masks, and an even smaller percentage of the total sample of 401. To better understand the variable impact that the prompts had on those that rarely or never wore masks I assigned each response a score between 0 and 4 ("Not at all likely"=0, through "Extremely likely"=4). These

responses were then aggregated by frequency of mask usage to provide an average measure of the effectiveness of each prompt by group. As seen in Table 6 below, previous behaviour patterns were an excellent indicator of whether the prompts were likely to be successful.[10]

Table 6: Policy Prompt Impact by Current Mask Usage

Mask Usage	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	Average
Never (n=106)	3.00	1.94	1.84	1.58	1.90	1.73	1.54	1.81	1.85	1.76	2.15	1.92
Less than half (n=40)	2.90	2.10	2.15	1.55	1.68	1.98	1.78	2.05	2.10	1.90	2.33	2.05
About half (n=31)	3.00	2.03	2.10	2.19	2.52	2.29	1.97	2.10	2.26	2.13	2.55	2.28
More than half (n=60)	3.35	2.48	2.33	1.97	2.62	2.55	2.35	2.68	2.72	2.53	2.90	2.59
Total (n=237)	3.07	2.12	2.05	1.76	2.12	2.05	1.84	2.11	2.16	2.03	2.42	2.16

Clearly the group that had not voluntarily worn masks previously were less likely than the remainder of the sample to respond positively overall. While P1 (the imposition of a fine) stands out from the rest of the group, the other scores clearly demonstrate the challenge in reaching the most resistant. One positive note is that, except for the 20 consistent dissenters, the overall image is that this group is still reasonably pliable, particularly when considering that nearly one out of five in the group was a member of effectively unreachable, pulling the scores of the other respondents down. Indeed, with the exception of the offer of a rebate for single-use masks (P7), a majority of the respondents in this group thought each prompt was moderately to extremely likely to influence their behaviour.

If replicable, this data seems to suggest that only around 5% of people are intractably unreachable on the mask issue (short of the use of government authority), with the vast majority of mask-hesitant people being open to at least some degree of persuasion. Some movement in this group would put compliance well above the 80% percent needed for a high degree of utility (Kai et al. 2020), suggests that policymakers do indeed have a variety of valuable tools at their disposal should they find ways to wield them effectively.

[10] See Appendix D for the full text associated with each prompt.

6.3.3. Tools and Moral Foundations

In trying to understand whether moral foundations demonstrated a meaningful relationship with the subject's policy preferences, I ran a Spearman test that compared scores from the different foundation with each of the prompts, with the results shown in Table 7. This showed that there was a fairly consistent and significant relationship between higher scores in harm/care and fairness/reciprocity, as well as a frequent connection to the ingroup/loyalty foundation. Prompts 3 and 4 – both being forms of government messaging, one of which promoted personal protection through public messages, the other a general plea through targeted messaging – were the only ones to show a significant relationship with the purity/sanctity foundation.

Table 7: Moral Foundations/Policy Prompts Spearman Test

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
Harm/Care	0.213**	0.237**	0.284**	0.231**	0.166*	0.185**	0.024	0.292**	0.279**	0.171**	0.178**
Fairness/Reciprocity	0.240**	0.230**	0.262**	0.239**	0.178**	0.183**	0.115	0.329**	0.252**	0.220**	0.201**
InGroup/Loyalty	0.120	0.193**	0.201**	0.265**	0.109	0.069	0.041	0.229**	0.217**	0.181**	0.141*
Authority/Respect	0.126	0.127	0.150*	0.136*	0.006	0.023	-0.001	0.140*	0.156*	0.105	0.073
Purity/Sanctity	0.076	0.096	0.156*	0.158*	-0.008	0.030	0.062	0.115	0.119	0.088	0.037

**. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

The correlation between the individualizing foundations and nearly every prompt points towards the idea that people that score highly in these foundations have a greater baseline of openness to masking interventions than those with lower scores. This seems more probable than the idea that each prompt uniquely appealed to these foundations and still makes some sense in the framework of moral worldviews. After all, even if the particular prompt made no overt appeal to one of these foundations, a person with a high harm/care score may be primed to accept interventions that they believe are likely to lead to better public health outcomes. Similarly, if a message about the common action problem of masks and the conception of wearing them for each other's benefit has germinated in an individual with a high fairness/reciprocity value, they may be similarly predisposed to a positive response. Of course, it still may be true that what is seen is more a reflection of a purely partisan disagreement than a direct relationship between worldview and preference, but the two are difficult to disentangle. Afterall, for those with well ordered worldviews their partisan grouping is at least in some ways a reflection of that

worldview, as partisan positions are also by some measure influenced by the perspectives of those with tribal loyalties to the group.

Lastly, maybe the most interesting element of the interplay between foundations and tools is found in the ingroup/loyalty numbers. While the other binding foundations have only rare and weak connections to the prompts, a high ingroup/loyalty score tended to offer more promise. This could be an indication of the fact that attitudes towards masking is not consistent between all conservative communities, and therefore what it means to affirm those connections may sometimes reinforce mask usage. There is, however, another intriguing possibility. As Jonathan Haidt has observed, the way that conservatives tend to interact with the harm/care foundation is different from the way that liberals do. In particular, for those on the right, the notion of care is less abstractly applied. That is to say, while liberals may bear a sense of care for the unknown other, conservatives are more likely to apply this to those that they are connected with through group loyalties (Haidt 2021, p. 158). It is possible that the connection for conservatives between these two foundations, while not being triggered by abstract appeals that connect more with a sense of reciprocity with strangers or the general public, may be activated when they believe the action will show care for ingroup members. While a further examination of this would be required, it could help explain why appeals to mask efficacy (such as mask being certified, or messaging that promotes effectiveness) elicit a more positive response from those with higher ingroup/loyalty scores.

7. Discussion

There is good evidence from this study that there exists a positive relationship between mask usage and the two individualizing moral foundations (that of harm/care and fairness/reciprocity), while no significant relationship, either negative or positive, exists with the binding foundations. It may be that this is part of what contributes to the fact that liberals tend to be more consistent in their attitudes towards masking, and conservatives, while far from universally opposed to masking, are more diverse in their approach. Understanding this is straight forward enough, after all, if there is a disparate moral perspective on the act of masking itself, it naturally follows that we would also see disparate behaviour patterns.

Using this understanding to help shape the approach to mask-hesitant Canadians is a different problem. The most direct approach to using moral foundations as a means of improving behaviour would be to make a moral appeal that targets strongly held foundations. Unfortunately, in this current situation, the lack of any significant relationship between masks and the binding foundations favoured by conservatives makes such an approach more difficult. While, one could certainly still tailor such an appeal, there is no particular evidence these relationships are strong enough to have a meaningful impact upon a wide swath of those that avoid masking. That said, it may yet be a strategy worth pursuing to frame the appeals along the lines of various moral foundations as it does offer alternative methods of reaching those that are otherwise difficult to persuade, and a variety of appeals may reach different segments of this population, even if one approach will not suffice for all of them.

Additionally, despite not having a clear foundation to target based on any negative relationship with masking, one possible connection does merit a closer examination. The possible connection between a conservative framing of harm/care that makes use of ingroup appeals rather than societal appeals may hold real promise. While it is not clear how large a segment of the population this would reach, the fact that harm/care scores are still quite high among both conservative and mask hesitant groups make this an intriguing prospect. It may well be the case that a part of the problem has not been that the incorrect foundations have been targeted for conservatives, but instead that the framing of harm/care arguments have not been well adjusted to this group, focusing more on the abstract than the singular. Governments may do well to craft messages that work at triggering this connection, or to finding ways of partnering with organizations that will trigger in-group responses.

Still, whether future policies or research can demonstrate an effective use of harm/care mask appeals to conservatives or not, there is substantial reason to believe that meaningful results can be achieved through policy interventions. As seen in this study, using conventional policy tools policymakers are likely to be able to influence the large majority of the population, with only about 5% showing a high level of resistance to all non-authority based measures. If the other 95% can be effectively reached it seems probable that the crucial rate of 80% compliance may be possible through a variety of non-punitive policy actions. Furthermore, governments may have other significant incentives to undertake these varied tactics. Specifically, some of these

measures may also come with the additional benefit of an improved quality of mask use in addition to a higher rate of use. As one Japanese study showed, even in a society with more of a culture of mask usage, incorrect use, including using soiled masks or reusing disposable masks, remains an issue (Machida et al. 2020). Messaging is an important tool in ensuring that masks are used correctly (Missoni, Armocida, and Formenti 2021), and is well paired with messaging that encourages mask usage in general. Perhaps even more promising, however, is the fact that being supplied with a mask upon entry to a public building was the most popular policy among respondents as such a policy could also help address some of the issues of misuse directly. That is to say, were government to partner with businesses and other organizations to ensure that high quality single use masks were available upon entry into their buildings, the issue of using soiled masks, reusing masks, and using poor quality masks would also likely decline. With masking becoming increasingly voluntary again, all while some risks are still present (Hager 2021), such tools may yet be vital for policymakers, who may find exceptional utility as they navigate how to achieve desired outcomes while minimizing burden on citizens.

The less authoritative method is not without its risks and challenges though. One of these is simply the fact that, while this survey demonstrates that a large percentage of people can be motivated to increase personal mask usage, it does not gauge how significant that behavioural change might be. If the aim was to achieve at least 80% usage, governments would be trusting that these strategies would have substantial behavioural impacts. Based on this survey, reaching this target would mean the entirety of the population that ever voluntarily wore masks would need to make it a habit, and nearly 7% of those that never wore masks would need to comply. Simply put, if the behavioural impacts are marginal the policy may be doomed. Further, it has been noted that where policies permit voluntary masking there is a social cost that can be paid by citizens through polarization, stigma, and concerns over fairness (Betsch et al. 2020). These risks are substantial, particularly when considering that the most effective implementation of non-authoritative tools is likely to be costly not only in terms of the financial burden, but also when considering the organizational output, human capital, and opportunity costs.

When balancing these costs, the use of mandates backed by force of law are relatively inexpensive and quite effective. Still, such approaches can also expend an extraordinary amount of political capital, making them much more difficult for politicians to impose or reimpose. Just

as crucially, balancing costs and the weight of intrusion and imposition onto citizens lives to achieve the desired outcome in the least burdensome way manageable is, as suggested by Hood and Margetts (2007), essential to good policymaking. While the potential risk of too light a touch can be significant, as governments move away from firmer measures, they would do well to explore these gentler tools to win over compliance where needed. Such an approach has the short-term benefit of softening the spread of current and future variants of the disease, but just as importantly expands the comfortable range of the government tool belt should the mask issue become more urgent in the future.

8. Limitations and Extensions

This study is not without its limitations. In particular, it suffers from the plight of much opinion polling in that it puts a great deal of weight upon the reliability of the subject to accurately reflect their views and predict their behaviour in an unpredictable world. Indeed, the speculative self reflection required of the participants in their responses to the tools prompts is far from an ideal means of gauging behavioural impact. While it offers some directional insights, the scenarios proposed are relatively crude outlines of possible interventions. Though some individuals may fairly accurately predict how they would respond to a proposed fine, it is difficult to predict a personal reaction to the idea of targeted messaging without even seeing sample messages. Similarly, other proposals may suffer or benefit depending upon execution, while some interventions that do poorly in isolation may perform more strongly when layered with further measures. The generally exploratory nature of this study, the constraints of time (both on the part of the participants and the researcher) and budget meant that a more thorough examination of these measures was beyond this project's reach. While the results are still revealing of preference and attitudes, this limitation prevents this study from speaking authoritatively regarding particular policy options.

Additionally, this project was undertaken over the course of over a year and during this time the topic was rapidly developing. While best efforts were made to accommodate this fact, it is important to understand that this data represents a snapshot in time. Just as COVID-19 presents new and unique policy challenges, the experience for individuals is also quite new, and as such it would be unreasonable to assume that attitudes towards the situation are firmly established.

Prolonged mask usage and mandates across the country seems to have brought on a level of fatigue for some that may diminish interest and willingness to use masks, while for others it may have become normalized behaviour. It is difficult to predict how the population will react over time and while this research provides insights those insights are still very much temporally bound to the moment of their collection. It is important to note that, in addition to being bound by time, there were also geographical limitations in the fact that respondents did not comprise a full national sample. The omission of respondents from Quebec and Atlantic Canada mean that the results cannot be assumed to apply equally across the nation. While the durability of moral foundations theory across cultures provides some buffer against this, it should be clear that this data speaks directly to only a section of Canada, rather than to the country at large.

Lastly, regarding the analysis itself, the comparative analysis, while offering directional insights, is limited and the lack of a regression analysis means that no causal relationships can be inferred. That said, there is still an opportunity to probe this data further. While this study was useful in providing an overview of the landscape as it pertains to moral foundations and masking, it is still possible for a more granular study to be undertaken. Indeed, taking the same data set and running a regression or other advanced analytics on it may yield noteworthy results that were uncovered in this analysis. Additionally, the initial survey included a variety of image prompts that asked the respondents to gauge their likelihood of mask usage across a range of scenarios. In the end, with all the other data gathered providing substantial content for analysis, the image prompts remained unanalysed. Further research could well make use of this data to gather further insights into how individuals have responded to different social situations and their likelihood to mask.

It is also worth considering the possible connection points on this issue with the COVID-19 vaccination issue. While the differences between the issues of masking and vaccination are significant enough that it would be risky to speculate about how responses to masking may also map onto the vaccine issue, a similar approach to the one taken here may also provide useful insights into that particular policy challenge.

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Appendices

Appendix A

UNIVERSITY OF SASKATCHEWAN

Behavioural Research Ethics Board (Beh-REB) 15-Jan-2021

Certificate of Approval

Application ID: 2442

Principal Investigator: Peter Phillips

Department: Johnson-Shoyama Graduate School of Public Policy

Locations Where Research Activities are Conducted: Online, across Canada

Student(s): Daniel Rutherford

Funder(s):

Sponsor: University of Saskatchewan

Title: Moral Foundations and Mask Use

Approved On: 15-Jan-2021

Expiry Date: 15-Jan-2022

Approval Of: Behavioural Research Ethics Application

Consent Form

Survey

Acknowledgment Of:

Review Type: Delegated Review

CERTIFICATION

The University of Saskatchewan Behavioural Research Ethics Board (Beh-REB) is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TPCS 2 2018). The University of Saskatchewan Behavioural Research Ethics Board has reviewed the above-named project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this project, and for ensuring that the authorized project is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.

Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

ONGOING REVIEW REQUIREMENTS

In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month prior to the current expiry date each year the project remains open, and upon project completion. Please refer to the following website for further instructions: https://vpresearch.usask.ca/researchers/forms.php.

Digitally Approved by Vivian Ramsden, Vice Chair
Behavioural Research Ethics Board
University of Saskatchewan

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Appendix B

Consent Form:

Student Researcher
Daniel Rutherford, Graduate Student
University of Saskatchewan
E-mail: dar551@usask.ca

Supervisor
Peter Phillips, Professor
University of Saskatchewan
E-mail: peter.phillips@usask.ca
Phone: 306-966-4021

This survey is about your worldview, political orientation, and your personal response to the COVID-19 pandemic. It will ask you a range of questions about your attitudes and actions, as well as how you believe you would respond to particular situations. The purpose of the survey is to better understand how these personal factors of moral worldview and political preference relate to attitudes and actions regarding COVID-19 and mask use. Benefits of this research may include gaining a better understanding of how public policy is impacted by these personal factors and how government policy can more effectively account for such differences.

This 15-minute survey, supported by an internal University scholarship, is hosted by Voxco, a Canadian-owned and managed company whose data is securely stored in Canada. Data will be anonymous and the researchers will have no access to personal identifying information. Voxco's privacy policy can be found here: https://www.voxco.com/privacy-policy/.

This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca; (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

In order to complete this survey, you may be required to answer certain questions; however, you are never obligated to respond and you may withdraw from the survey at any time by closing your internet browser. Participation is strictly voluntary.

The final research product will be presented in aggregate form in Daniel Rutherford's master's thesis. If you would like a summary of the results, please contact Daniel Rutherford via email at dar551@usask.ca.

Appendix C

CONSENT

Approved Consent Form Here

S1Q1

When you decide whether something is right or wrong, to what extent are the following considerations relevant to your thinking?

	Not at all relevant	Not very relevant	Slightly relevant	Somewhat relevant	Very relevant	Extremely relevant
Whether or not someone suffered emotionally	○	○	○	○	○	○
Whether or not some people were treated differently than others	○	○	○	○	○	○
Whether or not someone's action showed love for his or her country	○	○	○	○	○	○
Whether or not someone showed a lack of respect for authority	○	○	○	○	○	○
Whether or not someone violated standards of purity and decency	○	○	○	○	○	○
Whether or not someone was good at math	○	○	○	○	○	○
Whether or not someone cared for someone weak or vulnerable	○	○	○	○	○	○
Whether or not someone acted unfairly	○	○	○	○	○	○
Whether or not someone did something to betray his or her group	○	○	○	○	○	○
Whether or not someone conformed to the traditions of society	○	○	○	○	○	○
Whether or not someone did something disgusting	○	○	○	○	○	○
Whether or not someone was cruel	○	○	○	○	○	○
Whether or not someone was denied his or her rights	○	○	○	○	○	○
Whether or not someone showed a lack of loyalty	○	○	○	○	○	○
Whether or not an action caused chaos or disorder	○	○	○	○	○	○
Whether or not someone acted in a way that God would approve of	○	○	○	○	○	○

S1Q2

To what extent do you agree or disagree with each of the following statements?

	Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree
Compassion for those who are suffering is the most crucial virtue.	○	○	○	○	○	○
When the government makes laws, the number one principle should be ensuring that everyone is treated fairly.	○	○	○	○	○	○
I am proud of my country's history.	○	○	○	○	○	○
Respect for authority is something all children need to learn.	○	○	○	○	○	○

People should not do things that are disgusting, even if no one is harmed.	○	○	○	○	○	○
It is better to do good than to do bad.	○	○	○	○	○	○
One of the worst things a person could do is hurt a defenseless animal.	○	○	○	○	○	○
Justice is the most important requirement for a society.	○	○	○	○	○	○
People should be loyal to their family members, even when they have done something wrong.	○	○	○	○	○	○
Men and women each have different roles to play in society.	○	○	○	○	○	○
I would call some acts wrong on the grounds that they are unnatural.	○	○	○	○	○	○
It can never be right to kill a human being.	○	○	○	○	○	○
I think it's morally wrong that rich children inherit a lot of money while poor children inherit nothing.	○	○	○	○	○	○
It is more important to be a team player than to express oneself.	○	○	○	○	○	○
If I were a soldier and disagreed with my commanding officer's orders, I would obey anyway because that is my duty.	○	○	○	○	○	○
Chastity is an important and valuable virtue.	○	○	○	○	○	○

S2Q1

Have you or anyone that you know contracted COVID-19?

- ○ Yes
- ○ No
- ○ Prefer not to answer

S2Q2

Based on what you know right now, how would you describe your personal risk of serious complications if you were to contract COVID-19?

- ○ Very low risk
- ○ Low risk
- ○ Slightly low risk
- ○ Moderate risk
- ○ Slightly high risk
- ○ High risk
- ○ Very high risk
- ○ Prefer not to answer

S2Q3

Do you share a household with, or are you in regular contact with individuals that you would consider high risk if they contracted COVID-19?

- ○ Yes
- ○ No
- ○ Prefer not to answer

S2Q4

Do you have a medical condition that prevents you from wearing a mask?

- ○ Yes
- ○ No
- ○ Prefer not to answer

S2Q5

To the best of your knowledge, are there currently any mandatory mask mandates in your city or region?

Mask mandates include mandatory mask usage established and/or enforced by a government agency, but not policies put in place by private businesses.

- ○ No - none that I am aware of
- ○ Yes - but only in government owned buildings, public transit, etc.
- ○ Yes - in all enclosed non-residential spaces, but with certain exceptions (e.g., private offices where workers can distance, places of worship, gyms etc.)
- ○ Yes - in all enclosed, non-residential spaces.
- ○ Other (please specify):

S2Q6A

Thinking back to before mask usage was mandated, how often have you worn a mask while in enclosed public spaces, stores, and/or businesses where it was not required?

- ○ Never
- ○ Less than half of the time, but at least once
- ○ About half of the time
- ○ More than half of the time, but not every time
- ○ Every time

S2Q6B

Thinking back over the past two weeks, how often have you worn a mask while in enclosed public spaces, stores, and/or businesses where it was not required?

- ○ Never
- ○ Less than half of the time, but at least once
- ○ About half of the time
- ○ More than half of the time, but not every time
- ○ Every time
- ○ I have not been in any businesses where masks were not required

S2Q7

Which of the following best represents your approach towards wearing masks in public if it were not required?

- ○ I would never wear a mask
- ○ I would not wear a mask unless I am required to do so
- ○ I would wear a mask if I have one with me or one is provided, but do not go out of my way to ensure that I wear one
- ○ I would wear a mask in public, but only when only when I cannot ensure physical distancing
- ○ I would always wear a mask when I am in public

S2Q8

Which of the following best represents your attitude towards wearing a mask in public?

- ○ I don't like wearing masks and refuse to wear one
- ○ I don't like wearing masks and avoid wearing one unless required
- ○ I don't like wearing masks, but I do it because of the social pressure
- ○ I don't like wearing masks, but I do it because it's the right thing to do
- ○ I am happy to wear a mask
- ○ Other (please specify):

S2Q9

As you understand it, how effective do you believe mask use is at limiting the spread of COVID-19?

- ○ Not at all effective
- ○ Slightly effective
- ○ Somewhat effective
- ○ Very effective
- ○ Completely effective
- ○ Don't know

S2Q10

How great of a threat do you believe COVID-19 is to the health of the public at large?

- ○ No threat at all
- ○ A mild threat
- ○ A moderately serious threat
- ○ A very serious threat
- ○ Don't know

S2Q11

What has been your **primary** source of information regarding mask use?

- ○ Friends and family
- ○ Social media (eg. Facebook, Twitter)
- ○ Provincial government figures (e.g., press conferences, public service announcements, etc.)
- ○ Federal government figures (e.g., press conferences, public service announcements, etc.)
- ○ Intergovernmental organizations (e.g., World Health Organization, United Nations, etc.)
- ○ News outlets
- ○ Scientific outlets (e.g., Academic journals, scientific websites, etc.)

○ Other (please specify):

S2Q12

How much do you trust the following information sources to provide accurate information about masks?

	Do not trust at all	Trust a little	Trust moderately	Trust a lot	Trust completely
Friends and family	○	○	○	○	○
Social media (eg. Facebook, Twitter)	○	○	○	○	○
Provincial government figures (e.g., press conferences, public service announcements, etc.)	○	○	○	○	○
Federal government figures (e.g., press conferences, public service announcements, etc.)	○	○	○	○	○
Intergovernmental organizations (e.g., World Health Organization, United Nations, etc.)	○	○	○	○	○
News outlets	○	○	○	○	○
Scientific outlets (e.g., Academic journals, scientific websites, etc.)	○	○	○	○	○

S3INSTUCTIONS

In the following section you will see several pictures. For each image, please indicate how likely you would be to wear a mask in each given scenario, provided you were not required to do so.

S3I1

S3I1_RESPONSE

How likely you would be to wear a mask in this scenario (provided you were not required to do so)?

○ Very unlikely

- ○ Unlikely
- ○ Somewhat unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Very likely

S3I2

S3I2_RESPONSE

How likely you would be to wear a mask in this scenario (provided you were not required to do so)?

- ○ Very unlikely
- ○ Unlikely
- ○ Somewhat unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Very likely

S3I3

S3I3_RESPONSE

How likely you would be to wear a mask in this scenario (provided you were not required to do so)?

- ○ Very unlikely
- ○ Unlikely
- ○ Somewhat unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Very likely

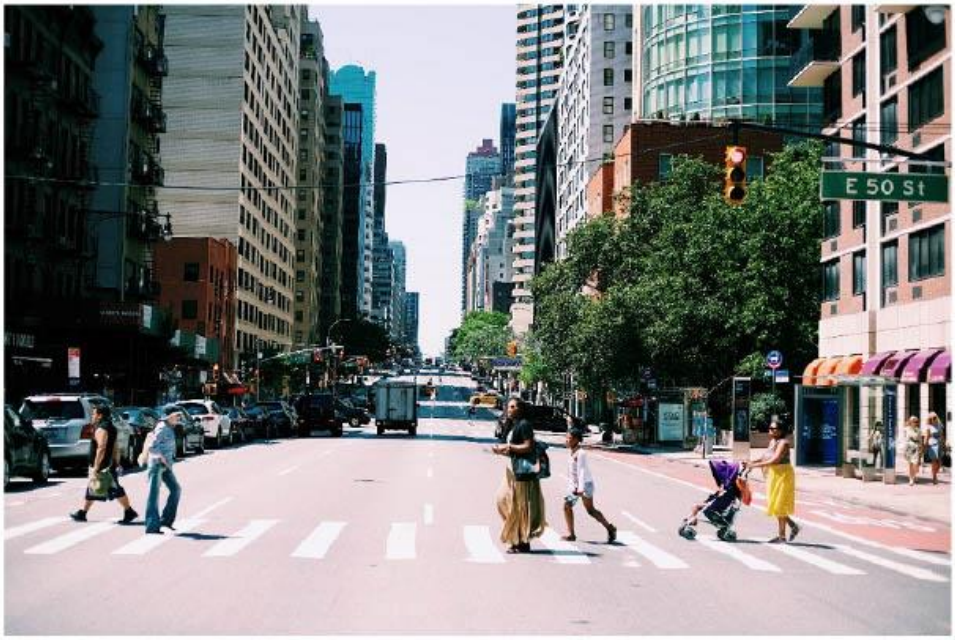
S3I4

S3I4_RESPONSE

How likely you would be to wear a mask in this scenario (provided you were not required to do so)?

- ○ Very unlikely
- ○ Unlikely
- ○ Somewhat unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Very likely

S3I5



S3I5_RESPONSE

How likely you would be to wear a mask in this scenario (provided you were not required to do so)?

- ○ Very unlikely
- ○ Unlikely
- ○ Somewhat unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Very likely

S3I6

S3I6_RESPONSE

How likely you would be to wear a mask in this scenario (provided you were not required to do so)?

- ○ Very unlikely
- ○ Unlikely
- ○ Somewhat unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Very likely

S3I7

S3I7_RESPONSE

How likely you would be to wear a mask in this scenario (provided you were not required to do so)?

- ○ Very unlikely
- ○ Unlikely
- ○ Somewhat unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Very likely

S3I8

S3I8_RESPONSE

How likely you would be to wear a mask in this scenario (provided you were not required to do so)?

- ○ Very unlikely
- ○ Unlikely
- ○ Somewhat unlikely
- ○ Somewhat likely
- ○ Likely
- ○ Very likely

S4Q1

How engaged do you consider yourself to be in federal politics?

- ○ Not at all engaged
- ○ Slightly engaged
- ○ Moderately engaged
- ○ Very engaged
- ○ Extremely engaged

S4Q2

If you voted in the last federal election, which party did you vote for?

- ○ Bloc Québécois
- ○ Conservative Party of Canada
- ○ Green Party of Canada

- ○ Liberal Party of Canada
- ○ New Democratic Party
- ○ People's Party of Canada
- ○ Other
- ○ I did not vote in the last federal election
- ○ Prefer not to say

S4Q3

Irrespective of party affiliation, do you identify as being more liberal or conservative?

- ○ Very liberal
- ○ Moderately liberal
- ○ Slightly liberal
- ○ Centrist
- ○ Slightly conservative
- ○ Moderately conservative
- ○ Very conservative
- ○ Do not know
- ○ Other (please specify)
- ○ Prefer not to say

S5Q1

In this section, please indicate how likely each scenario or government policy would be to increase your personal mask usage.

	Not at all likely	Somewhat likely	Moderately likely	Very likely	Extremely likely
If you faced a substantial fine for not wearing your mask in a public space.	○	○	○	○	○
If you saw regular public messages from government agencies telling you that mask use is highly effective at limiting the general transmission of COVID-19 (ie. billboards, public service announcements, etc).	○	○	○	○	○
If you saw regular public messages from government agencies telling you that mask use could help protect you personally from contracting COVID-19 (ie. billboards, public service announcements, etc).	○	○	○	○	○
If you received targeted messages from government agencies talking about the importance of mask use (ie. direct mail, localized social media posts, text message, phone call, etc.)	○	○	○	○	○
If you received a free reusable face mask in the mail.	○	○	○	○	○
If you were offered a rebate for the purchase of reusable face masks.	○	○	○	○	○
If you were offered a rebate for the purchase of single-use face masks.	○	○	○	○	○
If you knew your face mask was government certified.	○	○	○	○	○
If you knew your face mask was certified by a third-party scientific organization.	○	○	○	○	○

If you were able to pick up free single use face masks from central locations.	○	○	○	○	○
If all public buildings/businesses supplied face masks upon entry.	○	○	○	○	○

S6Q1

What gender do you most identify with?

- ○ Male
- ○ Female
- ○ Other
- ○ Prefer not to answer

S6Q2

What is your current age range (in years)?

- ○ 18-24
- ○ 35-34
- ○ 35-44
- ○ 45-54
- ○ 55-64
- ○ 65-69
- ○ 70-74
- ○ 75-79
- ○ 80-84
- ○ 85-89
- ○ 90-94
- ○ 95+
- ○ Prefer not to answer

S6Q3

What is your ethnic background (select all that apply)

- ☐ Aboriginal (First Nations, Inuit, Metis)
- ☐ African
- ☐ Asian (including South Asian)
- ☐ Middle Eastern
- ☐ Caucasian (or European)
- ☐ Latin-American
- ☐ Other (please specify):

  [ ]
- ☐ Prefer not to answer

S6Q4

Which province or territory do you currently live in?

- ○ Alberta

- ○ British Columbia
- ○ Manitoba
- ○ New Brunswick
- ○ Newfoundland and Labrador
- ○ Northwest Territories
- ○ Nova Scotia
- ○ Nunavut
- ○ Ontario
- ○ Prince Edward Island
- ○ Quebec
- ○ Saskatchewan
- ○ Yukon
- ○ Prefer not to answer

S7Q5

Do you live in an urban setting of 100,000 people or more?

- ○ Yes
- ○ No
- ○ Prefer not to answer

S7Q6

What is the highest level of education you have completed?

- ○ Less than a high school diploma
- ○ High school degree or equivalent
- ○ Trade Certificate/ Diploma
- ○ Bachelor's degree
- ○ Postgraduate degree (eg. Master's, PhD.)
- ○ Other (please specify):
- ○ Prefer not to answer

S7Q7

What is your employment status?

- ○ Employed Full-Time
- ○ Employed Part-Time
- ○ Self-Employed
- ○ Student
- ○ Unemployed (currently looking for work)
- ○ Unemployed (not currently looking for work)
- ○ Retired
- ○ Unable to Work
- ○ Other (please specify):

○ Prefer not to answer

S7Q8

What income bracket best represents your combined household income?

○ Under $40,000
○ $40,000 to 100,000
○ Over $100,000
○ Prefer not to answer

Appendix D

For each prompt the respondents were asked to indicate "how likely each scenario or government policy would be to increase your personal mask usage."

Prompt #1- If you faced a substantial fine for not wearing your mask in a public space.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	13	3.2	5.5	5.5
	Somewhat likely	14	3.5	5.9	11.4
	Moderately likely	31	7.7	13.1	24.5
	Very likely	64	16.0	27.0	51.5
	Extremely likely	115	28.7	48.5	100.0
	Total	237	59.1	100.0	
Missing	System	164	40.9		
Total		401	100.0		

Prompt #2- If you saw regular public messages from government agencies telling you that mask use is highly effective at limiting the general transmission of COVID-19 (ie. billboards, public service announcements, etc).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	34	8.5	14.3	14.3
	Somewhat likely	41	10.2	17.3	31.6
	Moderately likely	63	15.7	26.6	58.2
	Very likely	61	15.2	25.7	84.0
	Extremely likely	38	9.5	16.0	100.0
	Total	237	59.1	100.0	
Missing	System	164	40.9		
Total		401	100.0		

Prompt #3- If you saw regular public messages from government agencies telling you that mask use could help protect you personally from contracting COVID-19 (ie. billboards, public service announcements, etc).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	38	9.5	16.0	16.0
	Somewhat likely	46	11.5	19.4	35.4
	Moderately likely	59	14.7	24.9	60.3
	Very likely	54	13.5	22.8	83.1
	Extremely likely	40	10.0	16.9	100.0
	Total	237	59.1	100.0	
Missing	System	164	40.9		
Total		401	100.0		

Prompt #4- If you received targeted messages from government agencies talking about the importance of mask use (ie. direct mail, localized social media posts, text message, phone call, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	52	13.0	21.9	21.9
	Somewhat likely	49	12.2	20.7	42.6
	Moderately likely	69	17.2	29.1	71.7
	Very likely	39	9.7	16.5	88.2
	Extremely likely	28	7.0	11.8	100.0
	Total	237	59.1	100.0	
Missing	System	164	40.9		
Total		401	100.0		

Prompt #5- If you received a free reusable face mask in the mail.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	39	9.7	16.5	16.5

	Somewhat likely	44	11.0	18.6	35.0
	Moderately likely	46	11.5	19.4	54.4
	Very likely	65	16.2	27.4	81.9
	Extremely likely	43	10.7	18.1	100.0
	Total	237	59.1	100.0	
Missing	System	164	40.9		
Total		401	100.0		

Prompt #6- If you were offered a rebate for the purchase of reusable face masks.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	45	11.2	19.0	19.0
	Somewhat likely	46	11.5	19.4	38.4
	Moderately likely	44	11.0	18.6	57.0
	Very likely	56	14.0	23.6	80.6
	Extremely likely	46	11.5	19.4	100.0
	Total	237	59.1	100.0	
Missing	System	164	40.9		
Total		401	100.0		

Prompt #7- If you were offered a rebate for the purchase of single-use face masks.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	60	15.0	25.3	25.3
	Somewhat likely	41	10.2	17.3	42.6

	Moderately likely	53	13.2	22.4	65.0
	Very likely	43	10.7	18.1	83.1
	Extremely likely	40	10.0	16.9	100.0
	Total	237	59.1	100.0	
Missing	System	164	40.9		
Total		401	100.0		

Prompt #8- If you knew your face mask was government certified.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	37	9.2	15.6	15.6
	Somewhat likely	47	11.7	19.8	35.4
	Moderately likely	50	12.5	21.1	56.5
	Very likely	59	14.7	24.9	81.4
	Extremely likely	44	11.0	18.6	100.0
	Total	237	59.1	100.0	
Missing	System	164	40.9		
Total		401	100.0		

Prompt #9- If you knew your face mask was certified by a third-party scientific organization.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	27	6.7	11.4	11.4
	Somewhat likely	50	12.5	21.1	32.5
	Moderately likely	60	15.0	25.3	57.8
	Very likely	57	14.2	24.1	81.9

	Extremely likely	43	10.7	18.1	100.0
	Total	237	59.1	100.0	
Missing	System	164	40.9		
Total		401	100.0		

Prompt #10- If you were able to pick up free single use face masks from central locations.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	44	11.0	18.6	18.6
	Somewhat likely	42	10.5	17.7	36.3
	Moderately likely	53	13.2	22.4	58.6
	Very likely	59	14.7	24.9	83.5
	Extremely likely	39	9.7	16.5	100.0
	Total	237	59.1	100.0	
Missing	System	164	40.9		
Total		401	100.0		

Prompt #11- If all public buildings/businesses supplied facemasks upon entry.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all likely	27	6.7	11.4	11.4
	Somewhat likely	37	9.2	15.6	27.0
	Moderately likely	41	10.2	17.3	44.3
	Very likely	73	18.2	30.8	75.1
	Extremely likely	59	14.7	24.9	100.0
	Total	237	59.1	100.0	
Missing	System	164	40.9		

Total	401	100.0		