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Individual differences in moral judgment predict attitudes towards mandatory vaccinations

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**ARTICLE INFO**

Keywords: Covid-19, Moral judgment, Politics, Vaccination, Individual differences

**ABSTRACT**

Skepticism about the efficacy and risks related to Covid-19 vaccinations has become a politicized issue. In response, some politicians have proposed policies (such as imposing vaccine passports) aimed at increasing public vaccination rates. The response has been mixed. In the current study (N = 266), we examined the role of conservatism and moral judgments in accounting for these differences. Results from data collected between January and March 2021 showed that increased levels of conservatism and deontological processing (i.e., having a stronger D-process) were associated with less agreement to a government-imposed Covid-19 vaccine mandate. However, participants who made utilitarian responses to traditional switch and footbridge dilemmas reported greater agreement towards the same mandate. These results are consistent with prior findings showing political divides surrounding Covid-19 and indicate that individual differences in moral judgment predict opinion about a significant and current real-world issue.

1. Introduction

For societies to function, the rights of individuals must often be weighed against the best interests of the collective. Indeed, tensions regarding exactly how to strike this balance have become common in political debates. Currently, this tension is evident as governments around the world debate and make policies about how to combat the Covid-19 pandemic. With many nations vaccinating hundreds of thousands of their citizens daily, politicians and governments are weighing whether vaccinations should be mandatory for all citizens, an issue that has moral significance.

Indeed, many philosophical papers have addressed this subject, with some concluding that citizens have an ethical obligation to vaccinate themselves according to several different codes of ethics (e.g., Giubilini et al., 2018). Utilitarianism, for example, generally holds that morality is based entirely on consequences and that actions are morally appropriate insofar as they achieve the greatest good for the greatest number (Troyer, 2003). Thus, it is easy to see why people would be obligated to take the vaccine according to utilitarian ethics, as this would lead to better net consequences for all. However, basing the ethics of an action on its consequences is not universally supported by other ethical codes. For instance, deontological ethics holds other factors (like individual rights) as morally relevant and perhaps decisive, when judging the ethics of an action. Thus, depending on one’s favored code of ethics, a person may agree about an action’s consequence but disagree about whether that action is morally appropriate.

Research on moral judgment has found that disagreements about what is ethical in specific situations are common (e.g., Conway et al., 2018). What’s more, not only do people disagree about what is ethically appropriate, individuals are often inconsistent when making ethical decisions across a wide set of moral dilemmas (Greene et al., 2001). Typically, these dilemmas require participants to decide whether an action supported by utilitarian or deontological ethics is morally correct. In one famous dilemma, known as the trolley problem, participants are told that five people are about to be run over by an out-of-control trolley car unless the participant decides to pull a switch, which will divert the trolley away from these five people and towards a different, single bystander. Thus, to pull the switch, means that you will save five people but kill one. Utilitarianism supports pulling the switch (as one person dead is better than five) but deontological ethics does not (as killing one person is a violation of their rights).

While many philosophers have argued that morality based on deontological ethics leads to predictably sub-optimal results (e.g., Sunstein, 2005) most people show sensitivity to both utilitarian and deontological ethics (e.g., Conway & Gawronski, 2013). For instance, while most favor pulling the switch in the trolley dilemma, the opposite
pattern is observed for a modified (but consequentially consistent) variant of the same dilemma (Gleichgerrcht & Young, 2013). Known as the footbridge variant, all relevant factors are kept consistent, except that, to save the five individuals, the participant is told that they must fatally push a large man off a footbridge and in front of the trolley car. Here, participants show greater endorsement of the deontologically supported action (i.e., not pushing the man) (e.g., Greene et al., 2001). Taken together, this research has produced strong evidence that people’s moral judgments are the product of two often conflicting dual processes that roughly instantiate deontological versus utilitarian ethics (e.g., Greene et al., 2001). While this research has yielded many important findings, these investigations have been criticized for lacking external validity (e.g., Bloom, 2011) – that is, they ask participants to make moral judgments in situations that seem to be divorced from the everyday ethical decisions that people make.

Of course, due to the recent Covid-19 pandemic, certain long-standing moral questions, like the ethics of vaccine use, have become more relevant, and it is important to understand if individual differences in moral judgment predict real-world opinion and support for a government-enforced vaccine mandate. Thus, in the current study, participants rated their opinion about the seriousness of the Covid-19 pandemic and their agreement with a government-mandated vaccine before responding to questions about moral judgment and political orientation, a factor already shown to predict differences in perception and behavior related to Covid-19 (Allcott et al., 2020).

We predicted that participants’ social and economic conservatism would negatively correlate with their perceived seriousness of Covid-19 and their agreement with a government-mandated vaccine (Hypothesis 1). Second, we hypothesized that participants’ moral judgments would correlate with their agreement to the government mandating a vaccine (i.e., a negative correlation with deontological ethics and a positive correlation with utilitarian ethics) but not to their perceived seriousness of the pandemic (Hypothesis 2).

2. Method

2.1. Participants

Two hundred seventy-one (166 males; M_age = 38.50, SD = 10.64) participants completed the study on MTurk after passing a series of attention and quality checks. Participants were paid a flat rate of $1.00 with the opportunity to earn a bonus of $0 and $2.40 based on their performance in an unrelated game they played at the end of the study for a different research purpose. Informed consent was obtained for all participants before data collection, which occurred between January and March of 2021. This research was funded by a graduate student grant from the University of Toledo, Psychology Department.

2.2. Measures

2.2.1. Moral judgment

Participants responded to two sets of moral dilemmas. The first set, developed by Conway and Gawronski (2013), allows for an analysis of participants’ utilitarian and deontological processes, independently, using 20 specially-constructed moral dilemmas. By assessing their responses, continuous measures of participants’ utilitarian and deontological process strengths, along with their percentage of utilitarian responding, can be calculated (see Conway & Gawronski, 2013 for a review).

In a second dilemma set participants were asked to endorse either a utilitarian or deontological decision in the switch and footbridge variants of the trolley problem. By comparing participants’ responses to these two cases, prior research (i.e., Gleichgerrcht & Young, 2013) has divided participants into four groups: Utilitarian, Typical, Non-utilitarian, and Outlier. Using this method, 102 were classified as utilitarian, 91 as deontological, 73 as typical, and 5 as outliers, the latter of which were removed from analysis.

2.2.2. Conservatism

The social and economic conservatism scale (Everett, 2013) assessed participants’ rates of social and economic conservatism. Across 12-items, participants were asked to rate their views about specific politically relevant topics (e.g., welfare benefits) on a scale of 0–100. Higher values indicate greater rates of conservatism.

2.2.3. Perception and opinion about Covid-19

Participants responded to two questions to assess their perception of the seriousness of Covid-19 and their opinion about a governmental vaccine mandate. The first question, “Please rate on the scale below how serious you believe the current Covid-19 global pandemic is?”, was assessed on a 100-point scale, ranging from 0 (Not very serious), 50 (Somewhat serious), to 100 (Very serious). The second question, “If a vaccine to Covid-19 were to be created and become publicly available, do you think the government should require that all adult citizens take the vaccine?”, was assessed on a 7-point scale, ranging from 1 (Not at all) to 7 (Very Much).

3. Results

Descriptive statistics and inter-correlation coefficients (Pearson’s r) for all measures can be seen in Table 1. As listed, both the perceived seriousness of Covid-19 and agreement with a government-based vaccine mandate correlated negatively with economic and social conservatism. The moral judgment variables (i.e., participants’ percentage of utilitarian decisions, D-process, and U-process strength) showed no relationship with participant-perceived seriousness of Covid-19. However, participants’ percent of utilitarian decisions correlated positively with support for a mandated vaccine, while their D-process strength showed a negative correlation.

To examine this relationship further, a hierarchical linear regression was conducted with participant agreement with a government vaccine mandate entered as the predicted (outcome) variable. Participants’ seriousness ratings of Covid-19 were entered into the first step of the model. In the second step, participants’ composite conservatism, U- and D-process variables were entered.

The first step was significant, $F(1,264) = 82.78, p < .01, R^2 = 0.24$. More importantly, the second step in the model was also significant, $\Delta F$ (3261) = 13.67, $p < .01$, $\Delta R^2 = 0.09$, indicating that participants’ conservatism and moral processes accounted for an additional 9% of the variance above and beyond their perceived seriousness of the Covid-19 pandemic. However, only participants’ conservatism ($p = .02$) and D-process strength ($p < .01$) were significantly associated with their opinions about a vaccine mandate. Full results can be seen in Table 2.

Two separate 1-Way ANOVAs investigated the effect of participants’ moral classification (i.e., utilitarian, typical, non-utilitarian) on perceived seriousness of Covid-19 and agreement with a government-imposed vaccine mandate. The first ANOVA did not find a significant effect of moral classification on perceived seriousness of the pandemic, $F(2,263) = 2.96, p = .054, \eta^2 = 0.02$, but the second ANOVA found a significant effect of moral classification on support for a government-imposed vaccine mandate, $F(2,263) = 8.34, p < .01, \eta^2 = 0.06$. Tukey post hoc comparisons found that the utilitarian group (M = 5.03) showed greater support for the mandate than the non-utilitarian group (M = 3.73; $p < .01$) but did not differ from the typical group (M = 4.51; $p = .28$). The typical group also did not differ from the non-utilitarian group ($p = .07$).

4. Discussion

The purpose of the current study was to gather important and timely information about the effect of moral judgment on peoples’ perceptions and opinions about Covid-19. Due to prior evidence showing a
relationship between political differences in perception and behavior related to Covid-19 (e.g., Allcott et al., 2020), participants’ conservatism was also assessed. Results supported hypothesis one, showing that conservatism negatively correlated with perceived seriousness of Covid-19 and support for a mandated vaccine. These results add to a growing body of evidence indicating a political divide not only in the perception of Covid-19 but also, in support for potential policies to combat Covid-19.

The inclusion of the mandatory vaccine question was designed to target and be predicted by, participants’ differences in moral judgment. As to this question, the results supported hypothesis two, showing that individual differences in moral judgment did not correlate (see Table 1) or predict perceived seriousness of the Covid-19 pandemic. However, participants’ D-process showed a negative association with (and predicted) agreement for a government-imposed mandatory vaccine (also supporting hypothesis two). Interestingly, participants’ U-process strength did not significantly correlate with or predict support for the mandate. This is somewhat surprising, as it seems likely that a mandated vaccine would lead to better consequences. Research by Kahane et al. (2018) indicating that utilitarianism is not unidimensional, but rather, motivated by two distinct factors (i.e., impartial beneficence and instrumental harm), might offer an explanation. That is, it could be that while the utilitarian process (as a whole) is not associated with opinions about a vaccine mandate, specific dimensions (i.e., impartial beneficence) may be. Still, participants’ percent of utilitarian decisions did positively correlate with agreement for a government-imposed vaccine mandate and utilitarians (via the moral classification analysis) showed significantly higher agreement with a mandate compared to non-utilitarians.

Despite several methodological limitations, such as not controlling for emotion (which has been related to deontological processing) or economic status (which might predict different opinions about Covid-19), these results reiterate the previously found political differences in perception and support of certain policies related to Covid-19. This is important in its own right, as our society, and societies around the globe are still dealing with the Covid-19 pandemic and must continue to make policy to combat the pandemic. In addition, these results show that moral judgment is associated with rated support for certain policies to combat Covid-19. Future research should collect data on how moral judgment predicts or correlates with other policies related to the pandemic and investigate if specific dimensions of utilitarianism (i.e., impartial beneficence) predict support for such policies.

CRediT authorship contribution statement

Evan Clarkson: Conceptualization, Methodology, Software, Data curation, Writing – original draft, Visualization, Formal analysis.
John D. Jasper: Supervision, Writing – review & editing.

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### Table 1
Descriptive statistics and inter-correlations between variables.

|                           | M     | SD    | (1)   | (2)   | (3)   | (4)   | (5)   | (6)   |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| (1) Covid-19 seriousness   | 79.81 | 24.18 |       | –     |       |       |       |       |
| (2) Vaccine agreement     | 4.44  | 2.28  | 0.49**| –     | –     | –     | –     | –     |
| (3) D-process             | 0.59  | 0.26  | –0.05 | –0.29**| –     | –     | –     | –     |
| (4) U-process             | 0.26  | 0.23  | –0.01 | –0.02 | 0.17**| –     | –     | –     |
| (5) % of utilitarian       | 0.26  | 0.04  | –0.15*| –0.04 | –0.15*| –0.01 | –     | –     |
| (6) Social conservatism    | 54.93 | 25.34 | –0.18**| –0.29**| –0.01 | –0.08 | –0.07 | 0.65**|
| (7) Economic conservatism  | 55.0  | 19.68 | –0.32**| –0.29**| –0.10 | –0.08 | –0.07 | 0.65**|

Note. N = 266.
* p < .05.
** p < .01.

### Table 2
Regression analysis for agreement with government-imposed vaccine.

|                      | F     | R²   | β   | 95% CI  |
|----------------------|-------|------|-----|---------|
| Perceived seriousness | 82.78 | 0.24**| 0.49**| 0.04-0.06|
| U-process            | 0.02  | -0.85-1.19 |
| D-process            | -0.28**| -3.34 to -1.55 |
| Conservatism         | -0.12 | -0.03 to -0.0 |

Note. N = 266.
* p < .05.
** p < .01.